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NOMINATIONS OF FREDERICK D. GREGORY TO BE DEPUTY ADMINISTRATOR OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION; KATHIE L. OLSEN AND RICHARD M. RUSSELL TO BE ASSOCIATE DIRECTORS OF THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

JULY 18, 2002

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COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

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C O N T E N T S

NOMINATIONS OF FREDERICK D. GREGORY TO BE DEPUTY ADMINISTRATOR OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION; KATHIE L. OLSEN AND RICHARD M. RUSSELL TO BE ASSOCIATE DIRECTORS OF THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

THURSDAY, JULY 18, 2002

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 2:30 p.m. in room SR-253, Russell Senate Office Building, Hon. Ron Wyden, presiding.

Senator WYDEN. The hearing will come to order. Senator Nelson seems to be on a tight time schedule, and he'd like to make some comments and introduce one of the nominees, and we'll recognize him for that purpose.

STATEMENT OF HON. BILL NELSON,
U.S. SENATOR FROM FLORIDA

Senator NELSON. Well, thank you, Mr. Chairman, and it is my pleasure to be here on behalf of Fred Gregory.

NASA is this wonderful little $15-billion-a-year agency that encapsulates the hopes and the dreams and the desires of the American people. When NASA succeeds, the American people cheer.

What child, what student, can you not find a way to interest them in science and mathematics and technology by talking to them about the space program? That is just one of the reasons that it's so very important that we have the right kind of management for NASA.

I believe that the right person for Deputy Administrator, the number-two position in the agency, is Fred Gregory. He has vast experience with NASA, having come to NASA as a—and retiring—Colonel in the United States Air Force after he had had a career logging 7,000 hours in more than 50 types of aircraft, including 550 combat missions in Vietnam.

Fred came to NASA as a pilot astronaut, and I can tell you that they pick only the best of the best. These folks have incredible experience as pilots, most of them military test pilots. In that capacity, Fred has flown three missions, one in the right seat as pilot, and two in the left seat as commander.

After his active-duty astronaut office days, then he went into the Administration. He served as Associate Administrator for the Office of Space Flight, in an acting capacity, and then he was selected permanently in that position in February of this year. He was responsible in that position of management in overseeing the International Space Station, Space Shuttle operations, space access using expendable launch vehicles for commercial launch services, space communications, and advanced programs.

Before that, he was an Associate Administrator of the Office of Safety and Mission Assurance. In this capacity, he was responsible for assuring the safety, reliability, quality, and mission assurance of all NASA programs. That post is particularly important to NASA after awful mistakes on the Apollo launch pad caused a fire that killed three astronauts. Mistakes occurred again in January of 1986, which resulted in the Challenger disaster and a renewed committment to safety.

Now, you've heard me, Mr. Chairman, from this very position on this very Committee, keep saying over and over that we have got to find the resources in NASA to do the safety upgrades in the Space Shuttle, because we should never get to a position where we compromise safety.

And so it would give me—and I bring to the Committee for its consideration—a great deal of assurance of having someone like Fred as the Deputy Administrator so that, as attuned as he is, not only to the astronaut corps, but as experienced as he is having been the head of safety for NASA, it is a very, very important component of how NASA ought to be managed these days.

So, Mr. Chairman, I bring to you an astronaut, a test pilot, a manager of flight safety programs, and launch support operations. He is a graduate from the Air Force Academy. He has a Master's Degree. I could list all of the medals that he has. Needless to say, they are numerous. And he has my unqualified support. He's a good man. He's a great patriot. I'm proud to call him my friend.

Thank you.

OPENING STATEMENT OF HON. RON WYDEN, U.S. SENATOR FROM OREGON

Senator WYDEN. I thank my colleague and appreciate his comments.

Today, the Committee is going to consider the nominations of Fred Gregory to be Deputy Administrator of NASA, and Kathie Olsen and Richard Russell to be Associate Directors in the White House Office of Science and Technology Policy. We've worked very well. In particular, we address the three nominees with your prospective bosses, Sean O'Keefe, John Marburger, and we're glad that all of you are here.

Mr. Gregory, as Senator Nelson has noted, is currently the Associate Administrator for NASA's Office of Space Flight. In that capacity, he's responsible for overseeing the management of the International Space Station and Space Shuttle operations.

I know that Mr. Gregory feels strongly about carrying out the work of Administrator O'Keefe, and that's very welcome, and we're going to be asking you some questions today in particular about how the agency is going to get its financial house in order so it can

pursue its scientific vision. It is not going to be able to capture the scientific dreams and hopes of the American people if the finances are in such chaos. We've got to get that turned around, and we'll be anxious to hear your views on that.

We're pleased to have Dr. Olsen here. Among her other many distinguished qualifications, she's got roots in Oregon and Hosford Grade School, Cleveland High School in Southeast Portland, and we're very glad that you are here and look forward to your remarks.

In addition to your tenure as a Fellow in the office of Senator Burns, and he spoke glowingly as well, we're pleased that you're going to be a nominee for one of the top science jobs in government.

Next week, the Subcommittee on Science, Technology and Space is going to hold a hearing on the disgraceful situation with respect to the shortage of women in the hard sciences in this country, getting degrees, and some of the problems, some of the barriers that women have faced in terms of getting ahead in these vital fields. Dr. Olsen, we hope that you'll bring to your office a special passion to getting more young women to continue studies in the hard sciences.

Finally, Mr. Russell is very familiar to this Committee. He's been at OSTP for much of the Administration, spent the large part of his career in the House of Representatives, and we're pleased that you're here.

We know you're going to be involved in a host of issues, the two of you that will be Associate Directors of OSTP on matters that are before the Committee, such as climate change and homeland security, we're pleased to have a chance to discuss these issues with you.

I'm going to let my colleagues give their opening statements, and then we hope that each of you will recognize your families that are here, because I see some awfully proud people sitting behind you, and we want you to have a chance to recognize them.

First, let me recognize the Ranking Minority Member of the Committee, Senator McCain.

STATEMENT OF HON. JOHN MCCAIN,
U.S. SENATOR FROM ARIZONA

Senator MCCAIN. I will put my statement into the record, Mr. Chairman, thank you.

[The prepared statement of Hon. John McCain follows.]

PREPARED STATEMENT OF HON. JOHN MCCAIN,
U.S. SENATOR FROM ARIZONA

Mr. Chairman, I thank you for calling this hearing today.

I congratulate the nominees and thank them for their continued interest in, and commitment to, public service.

Each of the nominees have had impressive careers in public service. Mr. Fred Gregory has been nominated as the Deputy Administrator of the National Aeronautics and Space Administration (NASA). During his career, he has been a helicopter pilot in combat, an Air Force test pilot, a NASA astronaut, a NASA Administrator for Safety and Mission Assurance, and the Associate Administrator for Space Flight.

Dr. Kathie Olsen and Mr. Richard Russell have been nominated for positions as Associate Directors of the Office of Science and Technology Policy (OSTP). Both have worked in the science and technology policy arena for many years here in Wash-

ington. Dr. Olsen has held senior management positions at the National Science Foundation and NASA, including as Chief Scientist of NASA. Mr. Russell has worked for several years with the House Science Committee, most recently as Deputy Chief of Staff, and has been actively involved in science and technology legislation before the Congress.

During Mr. Sean O'Keefe's confirmation hearing to be NASA Administrator, we spoke about the reforms that must be made to restore the full credibility of NASA. I would like to re-emphasize the need for complete and accurate information, accurate cost estimates, and proper program management controls. These are essential to restoring confidence in NASA.

The recent Research Maximization and Prioritization (REMAP) Task Force of the NASA Advisory Council report gave us an update of the effects of various program design changes on the research capability of the International Space Station (ISS). Most interesting is their recommendation that "if enhancements to ISS beyond 'U.S. Core Complete' are not anticipated, NASA should cease to characterize the ISS as a science driven program."

Congress was sold on the Space Station because of its research capability. But if the Station cannot meet its original intent after we have spent over $20 billion of taxpayers funds, then we have a very serious problem. Congress and the Administration must decide whether or not the research capability originally envisioned is worth the significant additional costs to taxpayers.

The management challenges do not end at the Space Station. A grounded Shuttle fleet continues to cause great concern for the continuation of the program. Aeronautical research, financial management reform, and an aging workforce also must be addressed.

NASA also has a major investment in the U.S. Global Change Research Program, an inter-agency climate change research program. Of the $1.7 billion per year invested by the government, NASA provides approximately $1.2 billion. To reap the benefits of its investment in the program, the Office of Science and Technology Policy (OSTP) must ensure that the scientific research results are properly considered as part of the Administration's policy development on climate change.

Our science and technology policy continues to be a major issue for the nation. OSTP plays an important role in the formulation of this policy by advising the President and coordinating the Federal Government's research and development efforts. Science and technology policy is the underpinning of much of our economic growth and plays a vital role in homeland security and national defense.

I urge each of our nominees to work to ensure that our nation's investment in science and technlolgy is wise, and that the product of this investment is wisely applied.

Again, Mr. Chairman, I thank you for calling this hearing and look forward to hearing from the nominees.

Senator WYDEN. All right.

Senator Allen.

STATEMENT OF HON. GEORGE ALLEN,
U.S. SENATOR FROM VIRGINIA

Senator ALLEN. Thank you, Mr. Chairman.

My main purpose here is I want to introduce Mr. Russell. I do want to say that all three of these individuals in this panel seem eminently qualified. And Colonel Gregory, thank you for your great service.

What you'll hear from me most of the time is, "Remember the aeronautics aspect of NASA." And I know by your record that you were once at Langley. And so while you may be concerned about the Space Station, let us not forget the importance of research and development and making sure our country stays in the lead, or at least be competitive with the Europeans and the Japanese, as far as research in aeronautics. And I know that Chairman Wyden and I have had hearings in our Subcommittee referencing that.

But, Mr. Chairman, my main purpose here is to share with you my pleasure in the nomination of Mr. Richard Russell, as nominated by the President, to be Associate Director of the Office of

Science and Technology Policy. His wife, Lynley, is here, holding little George Wolverton there, who's reading now, as opposed to voting for his father. And I know his parents are here, as well, Ambassador and Mrs. Russell. Lynley's father, his father-in-law, Dr. Ogilvie, is here and his aunt, Mrs. Sloan is here, as well, and we welcome you all here, backing up Richard.

Just so you all know, Mr. Russell is a resident of the Commonwealth of Virginia, calling Fairfax County his home. He's a son of a career foreign service officer, who gained the rank of Ambassador before retiring. Mr. Russell did travel the world extensively growing up himself, but, showing great judgment, always returned to Virginia.

I'm pleased that we're going to have an individual with his technological expertise as one of the leaders in the Office of Science and Technology Policy. Virginia is one of the fastest growing technology communities, as is Oregon, so we share those similarities.

I think that as you, Mr. Chairman, and I have worked on NET Guard, and hopefully we'll get that through very shortly, there's an understanding that much of what we need to do in homeland security can be performed with the adaptation and the implementation of good ideas that are already out there in the private sector and adapt them to our needs in law enforcement and cyber-security and transportation and elsewhere.

Now, as the White House officer responsible for giving advice on these matters of science and technology, I think that Mr. Russell is going to play a very important role in setting these Federal policies that'll facilitate the continued growth and implementation of technology, not just from Virginia, but obviously from all over our country.

His qualifications are significant. Prior to the President's nominating him to this post, Mr. Russell served as the Chief of Staff of OSTP. He also joined OSTP from the House Committee on Science, which was a really great Committee in those days with Congressman Walker.

And during his 6 years on the Committee, he rose through the ranks from Professional Staff to Staff Director of the Technology Subcommittee, later to Deputy Chief of Staff for the Full Committee. In those capacities, Mr. Russell worked on a broad array of legislation and policies impacting technology development, including technology workforce issues, computer security research, Y2K and technology transfer. Much of what's going to need to be done in the area of cyber-security, I think, will need to be analyzed in some of the ways we analyzed Y2K compliance and the capability of achieving that once the year 2000 came, the capability of systems to meet that change in the date. The same needs to be done as standards in determining whether or not agencies are secure from cyber-attacks.

I can't think of a better addition, Mr. Chairman, to this important office than Mr. Russell. He has a wonderful record. And, in fact, the American Association of Engineering Societies, whose representation has over a million engineers nationwide, said this, and I quote: "His leadership on information technology, research and development, and on other issues makes us confident that Mr. Russell is the right man for the job. He shares our mission of using

technology, be it from the private or public sector, to make our country safer and our economy more robust."

The President made a fine choice in Mr. Russell. We look forward to working with you, and I hope our Committee approves him in on the floor as quickly as possible.

I thank you, Mr. Chairman.

Senator WYDEN. Very good. Let's meet the fan club. Let's meet the Gregory fan club.

Mr. GREGORY. If I might, starting on my far right, is my wife, Barbara; my grand-daughter, Caitlyn; her brother and my grandson, Scott; my mother, Nora; on the back row—I mean, the row behind that—my daughter-in-law, Natalie; my son, Fred—we call him Junior; you can do that, if you like—and another member of my family, Sue Fen, who has been working with me for 10 years.

Senator WYDEN. Basketball team and reserves. We welcome you.

The Russell caucus, let's meet them.

Mr. RUSSELL. As they've been introduced once, starting on the far end is my wife, Lynley, and she's holding George, who seems very content eating a book—someday it'll be reading, hopefully—and her father, Gary Ogilvie; my aunt, Sandy Sloan; my mother, Sally Russell; my father, Theodore Russell; and Dr. Marburger, the extended member of our family.

Senator WYDEN. Welcome. We're glad to have Dr. Marburger, as well.

And the Olsens.

Dr. OLSEN. My brother is here, Dr. Curtis Olsen. And I'd also like to say that of the Office of National Science Foundation, the Office of Integrated Systems, is here, and the Chief Scientist's Office of NASA is here, which is my extended family.

Senator WYDEN. Very good. Welcome to all of you. We're going to make your prepared statements a part of the record in their entirety. If you could just summarize your principal concerns, and then we're going to begin the questions with Senator McCain, because I know he's on a tight schedule.

So why don't we begin with you, Mr. Gregory?

STATEMENT OF FREDERICK D. GREGORY, NOMINEE TO BE DEPUTY ADMINISTRATOR OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Mr. GREGORY. Thank you very much. First of all, I'd like to thank Senator Nelson for those very kind words and to acknowledge to Senator Allen that I began my career at NASA at Langley on a 2-year assignment that has never ended. It began in 1974.

Mr. Chairman and the distinguished Members of the Committee, I'm honored to come before this Committee this afternoon as the President's nominee as the Deputy Administrator of the National Aeronautics and Space Administration. If confirmed, I will assure you that I will enter the job fully committed and dedicated to continuing NASA's preeminence in space and strengthening the confidence of this Committee, the Congress, the American people, and the world in NASA's ability to carry out exciting and important space missions safely and reliably and with credible fiscal and operational management. Across the agency's entire portfolio, as

we demonstrate daily, safety remains the agency's number-one priority.

My life has been richly blessed, and I've had the opportunity to participate in many areas of government service, both in the military and in the civil arena. As a child growing up in Washington DC, never in my wildest dreams did I ever consider that I would have had the extraordinary opportunities that I have experienced to date. Watching my father interact with NASA's legends, such as Keith Glennan, NASA's first Administrator in the 1950s and 1960s, having a friend and mentor in General Benjamin O. Davis, Jr., the father of a Tuskegee Airman whose funeral I attended yesterday. And now, more than 40 years since making that life-changing trip to the Air Force Academy after receiving my appointment from Congressman, the Reverend Adam Clayton Powell, I look back on a very rewarding life as an Air Force officer, an aviator, an astronaut, a husband and father, and, most importantly, a grandfather of four.

This nomination affords me the unique and challenging opportunity to make a significant difference in the future of our Nation's aeronautics and space leadership. Today, we, as a country, have a unique chance to reinvigorate a long-held position as a leader in aeronautics and space-related science, technology, and exploration.

It is my intent to assist the Administrator in NASA leadership to effectively articulate NASA's vision for the future, which the American people so richly deserve and expect. When we are successful in these efforts, and I know that we will be, then I am certain that the President and the Congress will provide the necessary resources to achieve that vision—to improve life here, to extend life there, and to find life beyond.

I think I know NASA and many of her strengths and weaknesses, and I believe that working with the Administrator, the Honorable Sean O'Keefe, as we approach the 45th anniversary of this great agency, we will continue to build a NASA that we can be proud of.

I look forward to serving President Bush, working with the Congress, and providing leadership in NASA as we chart America's future in aeronautics and space.

Mr. Chairman and Members of the Committee, words are inadequate to express my excitement in NASA and our country's future prospects. The discoveries accomplished that lie ahead in the fields of aeronautics and space for the Nation and for this world are unlimited. I'm humbled as well as honored by the prospect of serving as a NASA Deputy Administrator, if confirmed, at this crucial time in our country's history.

But before I close, I must thank my Mom and Dad for allowing me the freedom to roam, but setting the limits that kept me in line.

Thank you for this opportunity to appear before the Committee.

[The prepared statement and biographical information of Mr. Gregory follow:]

PREPARED STATEMENT OF FREDERICK D. GREGORY, NOMINEE TO BE DEPUTY ADMINISTRATOR OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Mr. Chairman and distinguished Members of this Committee, I am honored to come before the Committee this afternoon as the President's nominee for Deputy Administrator of the National Aeronautics and Space Administration. If confirmed,

I will assure you that I would enter the job fully committed and dedicated to continuing NASA's preeminence in space and strengthening the confidence of this Committee, the Congress, the American people, and the world in NASA's ability to carry out exciting and important space missions safely, reliably, and credibly in fiscal, management and operational terms. And across the Agency's entire portfolio, safety remains the Agency's No. 1 priority.

I am pleased that my mother Nora, wife Barbara, son and daughter-in-law, Fred and Natalie, and two of our grandkids, Scott and Caitlin, are sharing this experience with me today. My life has been richly blessed and I have had the opportunity to participate in many areas of Government service—in both the military and civilian arenas—activities of which one could only dream. As a child growing up in Washington, DC, never in my wildest dreams did I ever consider that I would have had the extraordinary opportunities that I have experienced to date. Watching my father interact with NASA legends such as Keith Glennan in the 1950s and 1960s. Now, more than 40 years since making that life-changing trip to the Academy, I look back on a very rewarding life as an Air Force officer, an aviator, an astronaut, and most importantly—the grandfather of four.

This nomination affords me the unique and challenging opportunity to make a significant difference in the future of our Nation's aeronautics and space leadership. Today, we as a country have a unique opportunity to reinvigorate our long held position as the premier Nation in the world in the fields of aeronautics and space exploration. In the past, we have excelled and charted unexplored courses with such feats as: putting humans on the moon and in permanent orbit around the Earth; reaching distant planets with research satellites; working to make planes safer, quieter, energy efficient, environmentally friendly, and less expensive to manufacture, maintain, and operate; launching and operating the flagship in NASA's Earth Observing System—Terra—to better understand the real "big picture" of how the Earth's climate operates and how it may be changing; orbiting and maintaining the crown jewel of astrophysics research—the Hubble Space Telescope; generating new knowledge and creating excitement for Americans of every age; and inspiring the next generation of explorers—as only NASA can.

However, it is not just these headline-making programs that are indicative of our world renowned aeronautics and space endeavors. It is our people and our facilities that are the critical essence to discovery—and I believe we need to place renewed emphasis in these areas. It is essential that our blueprint for success align programs, infrastructure, and people. These are the basic keys for mission sustainability. And they require both vision and investment. On September 12, 1962, President Kennedy acknowledged the expense of being a leader in space when he recognized the unforeseen benefits to be derived by the country—"even though I realize that this is in some measure an act of faith and vision, for we do not now know what benefits await us."

The Nation and the world have been the beneficiaries of the vision, leadership, and investment made by previous leaders and visionaries in the fields of space as early as 50 years ago and aeronautics almost 100 years ago. It is our responsibility to pursue those same areas with vigor as a legacy for the next 50 to 100 years.

We have been resting on our past accomplishments and laurels for too long—at the dawn of this new millennium it is time for us to demonstrate those American traits that have made this country the envy of the world—reaching for the stars and making life better for our children and grandchildren. It is now time that we reassess the course we desire to take as a Nation in the fields of aeronautics and space research and technology. NASA is the American spirit. It is an expression of our will to explore and to take measured risk. It is the future—the future to create technology, to make discoveries from our world-class laboratory in space, to tackle aviation's deadliest safety issues, to pursue the space frontier through human exploration, to maintain a competitive edge in a worldwide economy, to monitor the environment from space providing unprecedented insights into our home planet, to inspire the next generation of explorers by motivating America's youth to pursue careers in science, math, and engineering. I believe that NASA represents the very best that America has to offer.

With the support of this Committee and the Congress as a whole, I will have the opportunity to join Administrator O'Keefe in leading NASA to a new and even more exciting era of exploration and discovery. The challenge of getting NASA's fiscal house in order looms large; however, it is not insurmountable. It will require a focused, disciplined, and sustained effort throughout the Agency—and I am confident we will demonstrate to the Congress and the Administration that we have installed viable fiscal and management processes. Restoring our credibility is of utmost importance. Our Nation is facing unprecedented challenges—in many areas. And as such, the world is changing, and if NASA is going to exploit these new opportunities

then America's space program must also change. As Sean O'Keefe has said, "Our future decisions will be science-driven, not destination-driven. The investments we make today must be justified by their contributions to the long-range goals of the Agency." This is our blueprint for the future.

It is my intention to assist the Administrator and the leadership in NASA to effectively articulate NASA's vision for the future, which the American people so richly deserve and expect. When we are successful in these efforts, and I know we will be, I am certain that the President and the Congress will provide the necessary resources to achieve that vision—To improve life here, To extend life to there, and To find life beyond.

In the 28 years that I have been working for NASA, I have seen what the talented people of the NASA team, both Government, university, and industry, can accomplish when given a challenge and the resources to explore, to develop new technology, and to foster education—building a stronger America. I have also seen the results of trying to do too much with too little. I think I know NASA and her strengths and weaknesses. And I believe that working with Sean O'Keefe as we approach the 45th anniversary of this great Agency, we will continue to build a NASA that we can all be proud of. I look forward to serving President Bush, working with the Congress, and providing leadership in NASA as we chart America's future in Aeronautics and Space.

Mr. Chairman and Members of the Committee, words are inadequate to express my excitement at NASA's and the country's future prospects. The discoveries and accomplishments that lie ahead in the fields of aeronautics and space for the Nation and the world are limitless. I am humbled as well as honored by the prospect of serving as Deputy Administrator for NASA at this crucial time in our country's history.

Thank you for the opportunity to appear before the Committee.

A. BIOGRAPHICAL INFORMATION

1. Name: Frederick Drew Gregory (Nickname used: Fred).
2. Position to which nominated: NASA Deputy Administrator.
3. Date of nomination:
4. Address: Information not released to the public.
5. Date and place of birth: January 7, 1941, Washington, DC.
6. Marital status: Married, Barbara Ann (Archer) Gregory.
7. Name and ages of children: Frederick Drew Gregory, Jr., 37; Heather Lynn (Gregory) Skeens, 35.
8. Education: Anacostia High School, September 1955-June 1958, diploma; Amherst College, attended 1958-1959; American University, attended 1959-1960; United States Air Force Academy, June 1960-June 1964, Bachelor of Science granted in June 1964; George Washington University, January 1975-August 1977, Master of Science, Information Systems, granted in August 1977.
9. Employment record: U.S. Air Force officer, June 1964-December 1993; NASA Associate Administrator, Office of Safety and Mission Assurance, November 1993-December 2001; NASA Associate Administrator, Office of Space Flight, December 2001-present.
10. Government experience: None.
11. Business relationships: Howard University, College of Engineering, Computer Science and Architecture, Board of Directors; Kaiser Permanente, Mid-Atlantic Region, Board of Directors; United States Air Force Academy Association of Graduates, Board of Directors.
12. Memberships: Honorary Board Member—National Capital Area Council of Boy Scouts of America; Member—Association of Space Explorers, American Institute of Aeronautics and Astronautics, Tuskegee Airmen, U.S. Air Force Academy Association of Graduates, U.S. Air Force Academy Sabre Society, Wild Rose Shores Community Association.
13. Political affiliations and activities: (a) List all offices with a political party which you have held or any public office for which you have been a candidate. None.
(b) List all memberships and offices held in and services rendered to all political parties or election committees during the last 10 years. None.
(c) Itemize all political contributions to any individual, campaign organization, political party, political action committee, or similar entity of $500 or more for the past 10 years. None.
14. Honors and awards: Honorary Doctor, University of the District of Columbia and College of Aeronautics, LaGuardia Airport; Air Force—Meritorious Service Medal, Air Force Commendation Medal, 16 Air Medals, 2 Distinguished Flying

Crosses, Legion of Merit, Defense Superior Service Medal, Defense Meritorious Service Medal, National Intelligence Medal; NASA—3 Space Flight Medals, 2 Outstanding Leadership Medals, Distinguished Service Medal; George Washington University, Distinguished Graduate Award; the Air Force Association, Ira Eaker Fellow.

15. Published writings: None.

16. Speeches: I have given several thousand speeches on the subject of space flight, risk management, and safety practices. With minor exceptions (copies of recent speeches provided), all have been without notes or written text.

17. Selection: (a) Do you know why you were chosen for this nomination by the President? The NASA Administrator, Sean O'Keefe, referred my name because of my vast experience at NASA in the human space flight program, both as an astronaut and in various management positions.

(b) What do you believe in your background or employment experience affirmatively qualifies you for this particular appointment? Broad NASA experience and management and leadership skills.

B. FUTURE EMPLOYMENT RELATIONSHIPS

1. Will you sever all connections with your present employers, business firms, business associations or business organizations if you are confirmed by the Senate? I plan to resign from the Boards of Directors of Kaiser Permanente and the Air Force Academy Association of Graduates if confirmed.

2. Do you have any plans, commitments or agreements to pursue outside employment, with or without compensation, during your service with the government? If so, explain. No.

3. Do you have any plans, commitments or agreements after completing government service to resume employment, affiliation or practice with your previous employer, business firm, association or organization? No.

4. Has anybody made a commitment to employ your services in any capacity after you leave government service? No.

5. If confirmed, do you expect to serve out your full term or until the next Presidential election, whichever is applicable? Yes.

C. POTENTIAL CONFLICTS OF INTEREST

1. Describe all financial arrangements, deferred compensation agreements, and other continuing dealings with business associates, clients or customers. None.

2. Indicate any investments, obligations, liabilities, or other relationships which could involve potential conflicts of interest in the position to which you have been nominated. L-3 Communications and Microsoft. If confirmed, I will not take any official action involving these two companies.

3. Describe any business relationship, dealing, or financial transaction which you have had during the last 10 years, whether for yourself, on behalf of a client, or acting as an agent, that could in any way constitute or result in a possible conflict of interest in the position to which you have been nominated. None of which I am aware.

4. Describe any activity during the past 10 years in which you have engaged for the purpose of directly or indirectly influencing the passage, defeat or modification of any legislation or affecting the administration and execution of law or public policy. None, other than my official activities as an Associate Administrator at NASA.

5. Explain how you will resolve any potential conflict of interest, including any that may be disclosed by your responses to the above items. I will resign from entities if necessary, recuse myself from participation in official matters involving parties with which I have potential conflicts, divest myself of conflicting holdings, or otherwise comply with the advice of the NASA General Counsel to resolve any potential conflicts.

6. Do you agree to have written opinions provided to the Committee by the designated agency ethics officer of the agency to which you are nominated and by the Office of Government Ethics concerning potential conflicts of interest or any legal impediments to your serving in this position? Yes.

D. LEGAL MATTERS

1. Have you ever been disciplined or cited for a breach of ethics for unprofessional conduct by, or been the subject of a complaint to any court, administrative agency, professional association, disciplinary committee, or other professional group? If so, provide details. Yes, I was identified as a responsible management official in an equal employment opportunity complaint filed by Ms. June E. Ellison during my employment at NASA, Agency Docket No. NCN-95-HQs-A016. Ms. Ellison alleged that she was subjected to illegal and discriminatory retaliation in the form of har-

assment or threats. The Agency found no discrimination had occurred and this decision was affirmed on appeal to the Equal Employment Opportunity Commission, Appeal No. 01982308.

2. Have you ever been investigated, arrested, charged or held by any Federal, State, or other law enforcement authority for violation of any Federal, State, county, or municipal law, regulation or ordinance, other than a minor traffic offense? If so, provide details. No.

3. Have you or any business of which you are or were an officer ever been involved as a party in interest in an administrative agency proceeding or civil litigation? If so, provide details. Although not a named party, I was the subject of an equal employment opportunity complaint, the resolution of which is described in response to 1 above.

4. Have you ever been convicted (including pleas of guilty or *nolo contendere*) of any criminal violation other than a minor traffic offense? No.

5. Please advise the Committee of any additional information, favorable or unfavorable, which you feel should be considered in connection with your nomination. None.

E. RELATIONSHIP WITH COMMITTEE

1. Will you ensure that your department/agency complies with deadlines set by congressional committees for information? As well as I am able.

2. Will you ensure that your department/agency does whatever it can to protect congressional witnesses and whistleblowers from reprisal for their testimony and disclosures? Yes.

3. Will you cooperate in providing the committee with requested witnesses, to include technical experts and career employees with firsthand knowledge of matters of interest to the committee? Yes.

4. Please explain how you will review regulations issued by your department/agency, and work closely with Congress, to ensure that such regulations comply with the spirit of the laws passed by Congress. NASA is not a regulatory agency. Nevertheless, for every NASA policy, requirement, or regulation that I initiate or approve, I will ensure that it complies with the spirit of the laws passed by Congress by vetting these NASA actions through, as a minimum, the General Counsel and the Offices of Legislative Affairs and the Inspector General.

5. Describe your department/agency's current mission, major programs, and major operational objectives. NASA Administrator Sean O'Keefe has established a new and very positive mission and vision for NASA's future.

The NASA mission is "to understand and protect our home planet, explore the Universe and search for life, and to inspire the next generation of explorers as only NASA can." One of the ways of accomplishing this mission is to ensure that our youth of today will be our explorers of tomorrow. Education is going to play a very important role in NASA's new mission. We have unveiled an Educator Mission Specialist program which will inspire our young people to be the next generation of explorers.

The new vision for NASA is to "improve life here, to extend life there, to find life beyond." NASA is our Nation's No. 1 aeronautics and space research and technology organization. In our new vision for the Agency, science objectives will direct us. In order to meet these goals, we have renewed our commitment to work with the public and private sectors and academia, in addition to our renewed commitment to fiscal responsibility.

6. Are you willing to appear and testify before any duly constituted committee of the Congress on such occasions as you may be reasonably requested to do so? Yes.

F. GENERAL QUALIFICATIONS AND VIEWS

1. How have your previous professional experience and education qualified you for the position for which you have been nominated? I hold a Bachelor of Science degree from the United States Air Force Academy and a Master's degree in Information Systems from George Washington University. This, along with my experience as a helicopter pilot in combat, an Air Force Test Pilot, NASA Astronaut, Associate Administrator for Safety and Mission Assurance for 9½ years, and most recently as the Associate Administrator for Space Flight, gives me a wide range of experience that will guide me in my performance as the Deputy Administrator. I also have 30 years of experience as an Air Force officer which has given me a great deal of leadership and management experience.

2. Why do you wish to serve in the position for which you have been nominated? I would like to be the next Deputy Administrator of NASA because it will afford me an opportunity to assist in returning the Agency to high morale, fiscal stability,

and scientific and technological superiority. I will be able to make a contribution, along with the entire NASA family, to restore the Agency to its rightful place of international prominence and leadership in the field of aeronautics and space research and development.

3. What goals have you established for your first 2 years in this position, if confirmed? As the Deputy Administrator, I am committed to pursuing the goals established for the Agency by the President and the NASA Administrator—e.g., to restore fiscal credibility, to fulfill the President's Management Agenda, and to inspire new generations of scientists, engineers, and explorers through education.

4. What skills do you believe you may be lacking which may be necessary to successfully carry out this position? What steps can be taken to obtain those skills? I am not an expert in all of the political aspects of the Agency's dealings at the Senior Management level. However, I will work with and learn from the Administrator during my tenure as the Deputy Administrator.

5. Who are the stakeholders in the work of this agency? NASA's primary stakeholders are: (1) the American public; (2) Congress; (3) the U.S. aerospace industry; (4) American academia (K-post graduate school), and (5) our international partners.

6. What is the proper relationship between your position, if confirmed, and the stakeholders identified in question No. 5? I will be the key manager within NASA to assure that all of the Agency's senior leaders correctly balance the needs of our stakeholders in decisionmaking.

7. The Chief Financial Officers Act requires all government departments and agencies to develop sound financial management practices similar to those practiced in the private sector. (a) What do you believe are your responsibilities, if confirmed, to ensure that your agency has proper management and accounting controls? My responsibilities as Deputy Administrator of NASA will be to oversee the staff functions of Headquarters to include oversight of the Agency's management and accounting controls in cooperation with the Chief of Staff and the Comptroller.

(b) What experience do you have in managing a large organization? In my position as Associate Administrator for Safety and Mission Assurance, I was responsible for the safety of all of NASA programs, managing a budget of over $25 million. These programs included Space Shuttle operations, the Shuttle-MIR program, the International Space Station operations, as well as expendable launch vehicles and aviation safety.

8. The Government Performance and Results Act requires all government departments and agencies to identify measurable performance goals and to report to Congress on their success in achieving these goals. (a) Please discuss what you believe to be the benefits of identifying performance goals and reporting on your progress in achieving those goals. The President's Management Agenda is an excellent example of the benefits of setting clear and reachable goals and measuring the progress with simple yet meaningful metrics. Performance goals give purpose and focus to Agency actions and the need to report creates accountability to ensure that the goals are met.

(b) What steps should Congress consider taking when an agency fails to achieve its performance goals? Should these steps include the elimination, privatization, downsizing or consolidation of departments and/or programs? Congress is responsible for providing the necessary oversight to ensure that the funds it appropriates from the Treasury are expended in a fiscally sound manner. If an agency continually fails to achieve its performance goals, I would expect that agency's management to be held accountable for developing a corrective action plan and implementing it.

(c) What performance goals do you believe should be applicable to your personal performance, if confirmed? If confirmed, I should be accountable for: (1) raising the morale of NASA employees throughout the Agency; (2) bringing NASA fiscal management in line with accepted business practices and metrics, and (3) setting forth a measurable and attainable set of scientific and technical objectives for the Agency over the next 5 years.

9. Please describe your philosophy of supervisor/employee relationships. Generally, what supervisory model do you follow? Have any employee complaints been brought against you? I believe in participatory leadership where we attempt to ingrain into our employees a sense of ownership and personal responsibility for the success or failure of the organization while recognizing that the senior leaders are ultimately responsible for decisionmaking. I have an open-door policy and make sure that I am always accessible to all members of my organization. I am interested in their views and ideas for making NASA a better place to work. One equal employment opportunity complaint has identified me as a responsible management official; both NASA and the Equal Employment Opportunity Commission found the complaint without merit. It is further described at D.1.

10. Describe your working relationship, if any, with the Congress. Does your professional experience include working with committees of Congress? If yes, please describe. As an Associate Administrator at NASA, I have testified before Congress on several occasions and worked closely with our oversight committees. Most recently on April 18, 2002, before the Subcommittee on Space and Aeronautics of the House Science Committee, I testified about NASA's space program initiatives. As Deputy Administrator, my goal will be to maintain a positive, productive relationship with the appropriate oversight committees so that we are open and cooperative in keeping them thoroughly informed of the Agency's goals and accomplishments in carrying out the vision of the President and the NASA Administrator.

11. Please explain what you believe to be the proper relationship between yourself, if confirmed, and the Inspector General of your department/agency. As the Deputy Administrator, I will be responsible for maintaining continuous contact with the NASA Inspector General to insure that we are continually aware of any areas of potential violations of law, fiscal waste, or management abuse and, with the Inspector General, raise these to the Administrator. I will serve as an advisor to the Administrator in developing immediate corrective courses of action to remedy all legitimate areas of concern identified by the Inspector General.

12. Please explain how you will work with this Committee and other stakeholders to ensure that regulations issued by your department/agency comply with the spirit of the laws passed by Congress. Although NASA is not a regulatory agency and therefore issues very few regulations, we do issue numerous internal policy directives implementing Federal law. As Deputy Administrator, I will ensure that NASA's processes for developing policy provide adequate opportunities for consultation with relevant stakeholders and that the final policies are consistent with not only the language of the law but its intent as well.

13. In the areas under the department/agency's jurisdiction, what legislative action(s) should Congress consider as priorities? Please state your personal views. Congress should consider funding the International Space Station and Shuttle Programs to the necessary level demonstrated by NASA to be justifiable and necessary for the longterm health of the science and technology benefit they potentially bring to our Nation and our international partners. Congress should also give very careful consideration to funding proposed initiatives in aeronautics research and development that will assist in maintaining the U.S. aerospace industry in a secure international leadership position.

14. Within your area of control, will you pledge to develop and implement a system that allocates discretionary spending based on national priorities determined in an open fashion on a set of established criteria? If not, please state why. If yes, please state what steps you intend to take and a timeframe for their implementation. My intent would be to support and advise the NASA Administrator on appropriate and prudent allocation of discretionary spending in support of the vision and guidance provided to NASA by the President and the Administrator. The national priorities necessary to carry out this vision and guidance will be developed in an open fashion through consultation with the NASA stakeholders.

Senator WYDEN. Mr. Russell.

STATEMENT OF RICHARD M. RUSSELL, NOMINEE TO BE AN ASSOCIATE DIRECTOR OF THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Mr. RUSSELL. Thank you, Mr. Chairman. It's a great honor and a privilege to come before you as the President's nominee for Associate Director of the Office of Science and Technology Policy.

As part of the Executive Office of the President, OSTP plays a critical role in advising the White House on the development and use of technology. If confirmed, I look forward to working with this Committee and the rest of Congress on issues ranging from nanotechnology to computer security.

Scientific and technical advances have driven our country's prosperity since the birth of our great Nation. Every child is aware of the fascination that many of our Founding Fathers held for the process of discovery. Benjamin Franklin stated, "Man is a tool-making animal." That statement seems a perfect summation of his personal drive to innovate. It is a drive shared by many great Ameri-

cans throughout history. From the Franklin stove to the Internet, American inventors have produced a seemingly endless array of revolutionary tools. Such tools have enabled us to win wars, advance freedom and democracy, cure disease, reduce hunger, travel further and faster, and share virtually limitless amounts of information around the world at the speed of light.

Technological advancements in the field of medicine and agriculture have contributed substantially to our Nation's wealth and well-being. Biotechnology has increased crop yields while reducing the need for pesticides and water, simultaneously helping the economy and the environment. Similarly, advances in biomedical technologies have enabled us to live longer, healthier lives.

Technology is also a key to our Nation's homeland. It will help improve security while enabling the continued flow of people and goods across our borders. Technology will help secure our critical infrastructures and will help us recover from any future attacks.

The fall in the NASDAQ from its peak in March of 2000 does not diminish the fact that technology is having a dramatic and positive effect on U.S. productivity and the economy. This year, patent filings are expected to total more than 340,000, a 70-percent increase from 1996. In the last decade, U.S. production of computer and office equipment increased twelve-fold, and the semiconductor production has increased by a factor of 20. U.S. exports of aerospace technologies, electronics, biotechnology, and software account for almost 30 percent of total U.S. exports.

While the U.S. remains the global leader in innovation, we cannot rest on our laurels. U.S. exports of technology have increased significantly over the last decade. However, imports have grown ever faster. That is why it's critical that we not only maintain, but also enhance, our Nation's ability to innovate.

OSTP plays a key role in promoting innovation. Through the National Science and Technology Council, OSTP coordinates government-wide science and technology initiatives, such as the Networking Information Technology Research and Development Program and the National Nanotechnology Initiative.

OSTP supports important presidential advisory panels, such as the President's Council of Advisors on Science and Technology, and the congressionally-chartered Commission on the Future of the United States Aerospace Industry.

I have spent almost a decade-and-a-half working on matters of science and technology policy. Working in the House and Senate on two congressional Committees, and as a former Chief of Staff of OSTP, I have had the opportunity to work on a broad range of issues critical to technology policy.

If confirmed, I look forward to working with Dr. Marburger, Congress, and the Administration in promoting science and math education, supporting sound research and development budgets, championing important policy initiatives, such as making the research and experiment tax credit permanent.

In addition, I will take a strong personal interest in policies that will help advance broadband. As the President stated on June 13th of this year, "This country must be aggressive about the expansion of broadband." To that end, the President has championed important economic policies, such as accelerated tax depreciation sched-

ules, research and networking on computer security, and, with the leadership of Chairman Wyden, Senator McCain, and Senator Allen, a moratorium on new access fees on the Internet.

The President has also tasked PCAST to recommend policies that will promote the adoption of the high-speed Internet. If confirmed, I will work with PCAST and the rest of the Administration to advance the President's objectives.

With the Committee's support and that of the full Senate, I look forward to an opportunity to work for OSTP.

Chairman Wyden, Members of the Committee, thank you again for considering my nomination.

[The prepared statement and biographical information of Mr. Russell follow:]

PREPARED STATEMENT OF RICHARD M. RUSSELL, NOMINEE TO BE AN ASSOCIATE DIRECTOR OF THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

It is a great honor and privilege to come before you as President Bush's nominee for Associate Director for the Office of Science and Technology Policy (OSTP). If confirmed, I will serve as OSTP's Associate Director for Technology and will work along side my fellow nominee and colleague, Dr. Kathie Olsen, who will be responsible for OSTP's science division.

As part of the Executive Office of the President (EOP), OSTP plays a critical role in advising the White House on the development and use of technology in the United States. If I am confirmed, I look forward to working with this Committee and Congress on issues ranging from nanotechnology to computer security.

Under the leadership of OSTP Director John Marburger, the office has been realigned to eliminate stovepipes and to allow for the seamless sharing of insights and information among all of OSTP's staff. This goal has been achieved by reducing the number of associate directors from four to two and by establishing an office structure that avoids drawing bright lines between science and technology.

Under the new structure, OSTP will have an associate director for each of its two principal components: science and technology. The associate directors will answer to the director and will have specific line authority over the departments that fall primarily within their issue areas.

If confirmed, I will be charged with the technology portfolio that includes three departments: Technology; Telecommunications and Information Technology; and Space and Aeronautics. Dr. Olsen will be assigned the science portfolio that includes Environment; Life Sciences; Physical Sciences and Engineering; and Education and Social Sciences. In addition, OSTP, through a joint arrangement with the Office of Homeland Security, has a department of Homeland and National Security. That department has been operating effectively under the direct supervision of Dr. Marburger. The department will continue to answer to Dr. Marburger through OSTP's chief of staff.

While each of the associate directors has responsibility for specific departments, we recognize that most important policy issues before OSTP have both a scientific and a technical component. The office has been structured, therefore, so that either associate director can tap into the expertise of any of the departments. For issues of particular significance, both associate directors will be heavily engaged, as will the chief of staff. In each instance, one of the associate directors will be designated the lead.

Let me give you two examples. Nanotechnology is a priority for the Bush Administration and OSTP. This program has components of both basic scientific research and applied technology research and development. If confirmed, I will have the lead on nanotechnology policy, but, because of its significant scientific component, the Physical Science and Engineering department will be heavily engaged, as well. The science and technology associate directors will jointly chair the National Science and Technology Council (NSTC) committee responsible for interagency coordination of nanotechnology.

Homeland security technology provides another good example. OSTP is assisting the Office of Homeland Security in coordinating plans to deploy new technologies at our Nation's borders to help ensure that we positively identify visitors to our country and determine if they have overstayed their visas. This goal presents many challenging technology development and deployment issues. While the department of Homeland and National Security has the lead on this matter, OSTP's department

of Technology has been directly engaged on the issue. If confirmed, I will consider technology deployment at our borders a personal priority.

The importance of technology and science policy to the economy led Dr. Marburger to conclude that OSTP should be linked to the National Economic Council (NEC). The associate director for technology will fulfill this coordination role with the NEC.

One cannot overstate the importance of science and technology policy to the economy. Scientific and technical advances have driven our country's prosperity since the birth of our great Nation. Every child is aware of the fascination that many of our founding fathers held for the process of discovery. In 1778, Benjamin Franklin stated, "Man is a tool-making animal." The statement seems a perfect summation of his personal drive to innovate. It is a drive shared by many great Americans throughout our history.

From the Franklin stove to the Internet, American inventors have produced a seemingly endless array of revolutionary tools. Such tools have enabled us to win wars, advance freedom and democracy, cure disease, reduce hunger, travel further and faster, and share virtually limitless amounts of information around the world at the speed of light.

Technological advancements in the fields of medicine and agriculture have contributed substantially to our Nation's wealth and well-being. In agriculture, biotechnology has enabled crop yields to increase while reducing the need for pesticides and water, simultaneously helping the economy and the environment. Agricultural biotechnology is a key element in the effort to address world hunger. The development of golden rice promises to prevent millions of cases of childhood blindness and needless deaths in developing nations. Similarly, advances in biomedical technologies have increased the quality and length of our lives.

Technology development and deployment will prove key to our Nation's efforts to secure the homeland. It will help improve security while enabling the continued flow of people and goods across our borders. Technology development and deployment will help secure our critical infrastructures and will help us recover from any future attack.

The fall in the NASDAQ from its peak in March of 2000 does not diminish the fact that technology is having a substantial, positive effect on U.S. productivity and the economy.

The U.S. remains the leading innovator in the world. This year patent filings are expected to total 340,000, a 70 percent increase from 1996.[1] In the last decade, U.S. production of computer and office equipment has increased 12-fold and semiconductor and related electronic components has increased by a factor of 20.[2] Further, U.S. exports of aerospace technologies, electronics, biotechnologies, and software account for almost 30 percent of U.S. exports.[3]

As President George W. Bush stated last month during the presentation of the National Medals of Science and Technology: "We'll continue to support science and technology because innovation makes America stronger. Innovation helps Americans to live longer, healthier and happier lives. Innovation helps our economy grow, and helps people find work. Innovation strengthens our national defense and our homeland security, and we need a strong national defense and homeland security as we fight people who hate America because we're free."

While the U.S. remains the global leader in innovation, we cannot rest on our laurels. U.S. exports of technology have increased substantially over the last 10 years, but imports have grown even faster. That is why it is critical that we not only maintain but also enhance our Nation's ability to innovate.

OSTP plays a key role in promoting innovation. Through the NSTC, OSTP coordinates governmentwide science and technology initiatives such as the Networking and Information Research and Development (NITRD) program and the National Nanotechnology Initiative (NNI). OSTP supports important Presidential advisory panels such as the President's Council of Advisors on Science and Technology (PCAST) and the Congressionally chartered Commission on the Future of the U.S. Aerospace Industry.

I have spent almost a decade and a half working on matters of science and technology policy. Working in the House and Senate, on two Congressional Committees, and as the former chief of staff of OSTP, I have had the opportunity to work on a broad range of issues critical to technology policy—ranging from computer security to standard setting, modernization of the air traffic control system, and information technology research and development.

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[1] Patent and Trademark Office, Department of Commerce.
[2] Federal Reserve Board, April 1992 to April 2002 comparison.
[3] 29 percent in 1999, *Science & Engineering Indicators 2002*, National Science Foundation.

If confirmed, I look forward to working with Dr. Marburger, Congress, in particular this committee, and the Administration as a whole in promoting science and math education, prioritizing critical research endeavors such as NNI and NITRD, supporting sound research and development budgets, and championing important policy initiatives such as making the research and experimentation tax credit permanent.

In addition, I will take a strong personal interest in policies that will help expedite the development and deployment of broadband technologies. As the President stated on June 13, 2002, "This country must be aggressive about the expansion of broadband." The President has championed important economic policies, such as accelerated tax depreciation schedules, the moratorium on new access fees on the Internet, and research on networking and computer security. The President has tasked PCAST to recommend policies that will promote the adoption of broadband technologies. If confirmed, I look forward to working with PCAST and the rest of the Administration to advance the President's stated objective.

With the Committee's support, and that of the full Senate, I look forward to the opportunity to work for OSTP.

A. BIOGRAPHICAL INFORMATION

1. Name: Richard Mather Russell.

2. Position to which nominated: Associate Director, Office of Science and Technology Policy.

3. Date of nomination: October 11, 2001 (intent to nominate), April 24, 2002 (sent to Senate).

4. Address: Office of Science and Technology Policy, Executive Office of the President, Washington, DC, 20502.

5. Date and place of birth: February 5, 1966, Naples, Italy.

6. Marital status: Married to Lynley Anne Ogilvie.

7. Names and ages of children: George Woolverton Ogilvie-Russell (6 months).

8. Education: Middlesex School, 1984 (High School); Yale University, 1988, B.S. Biology.

9. Employment record: Summer Employee; U.S. Embassy Prague; Prague, CZ, Summer 1988; Research Fellow; Conservation Found./World Wildlife Fund, Washington, DC; 1988-1989; Legislative Assistant; Congressman Curt Weldon, Washington, DC; 1989-1991; Legislative Assistant; Senator John Seymour, Washington, DC; 1991-1992; Director/Fed. Relations; Assoc. of California Water Agencies; Washington, DC; 1993; Professional Staff; U.S. House Comm. on Merchant Marine & Fisheries; Washington, DC.; 1993-1995 (Office of Congressman Curt Weldon; Washington, DC; Jan.-Feb. 1995); U.S. House of Representatives, Committee on Science; Washington, DC; 1995-2001, Professional Staff; 1995-1996 Staff Director; Subcommittee on Technology; 1996-1999, Deputy Chief of Staff, 1999-2001; Executive Office of the President, Office of Science and Technology Policy; Washington, DC; Chief of Staff, March-November, 2001, Consultant; November, 2001-Present.

10. Government experience: For my government experience, please refer to those positions listed in response to Question 9.

11. Business relationships: None.

12. Memberships: Former Member of the Westmoreland Square Homeowners Association Board of Directors; Former Chairman of Saybook College Council (Yale University).

13. Political affiliations and activities: (a) List all offices with a political party which you have held or any public office for which you have been a candidate. None.

(b) List all memberships and offices held in and services rendered to all political parties or election committees during the last 10 years. I have assisted on a volunteer basis a number of candidates for office including, President George W. Bush, Senator George Allen and Congressman Curt Weldon. I have never held an official position on an election committee.

(c) Itemize all political contributions to any individual, campaign organization, political party, political action committee, or similar entity of $500 or more for the past 10 years. None.

14. Honors and awards: Mary Casner Award for Outstanding Service to Saybrook College (Yale University), 1988 Research Fellowship, The Conservation Foundation/ World Wildlife Fund, 1989.

15. Published writings: In 1993, I wrote an article on likely changes to the Safe Drinking Water Act for the Association of California Water Agencies newsletter.

As a Research Fellow for the Conservation Foundation/World Wildlife Fund (1988-1989), I contributed to the Successful Communities Newsletter. The newsletter was produced by the Conservation Foundation.

16. Speeches: Statement before the National Academy of Sciences Committee on Organization and Management of Research in Astronomy and Astrophysics, June 13, 2001 (Attached).

17. Selection: (a) Do you know why you were chosen for this nomination by the President? I believe I was chosen because of my considerable background and interest in science and technology policy.

(b) What do you believe in your background or employment experience affirmatively qualifies you for this particular appointment? I have worked on science and technology related policy since 1989. I have spent 10 years working with Congress on a range of S&T issues including 6 years with the House Science Committee. I have served as Staff Director for the Science Committee's Subcommittee on Technology and Deputy Chief of Staff for the Committee as a whole. I also served as Chief of Staff for OSTP before being nominated by the President.

B. FUTURE EMPLOYMENT RELATIONSHIPS

1. Will you sever all connections with your present employers, business firms, business associations or business organizations if you are confirmed by the Senate? Not applicable. I have been employed by OSTP since March 2001.

2. Do you have any plans, commitments or agreements to pursue outside employment, with or without compensation, during your service with the government? If so, explain. No.

3. Do you have any plans, commitments or agreements after completing government service to resume employment, affiliation or practice with your previous employer, business firm, association or organization? No.

4. Has anybody made a commitment to employ your services in any capacity after you leave government service? No.

5. If confirmed, do you expect to serve out your full term or until the next Presidential election, whichever is applicable? Yes.

C. POTENTIAL CONFLICTS OF INTEREST

1. Describe all financial arrangements, deferred compensation agreements, and other continuing dealings with business associates, clients or customers. None.

2. Indicate any investments, obligations, liabilities, or other relationships which could involve potential conflicts of interest in the position to which you have been nominated. I own stock in the following companies: Automatic Data Processing, EMC Corporation, Intel Corporation, Merck & Company, Microsoft Corporation, Qualcomm Inc, McData Corporation, and Schering Plough Corporation.

Within 90 days of my confirmation I will divest my holdings in Automatic Data Processing, Merck & Company, and Schering Plough Corporation. My other holdings are small, and fall below the de minimis level for conflicts of interest under Office of Government Ethics regulations.

3. Describe any business relationship, dealing, or financial transaction which you have had during the last 10 years, whether for yourself, on behalf of a client, or acting as an agent, that could in any way constitute or result in a possible conflict of interest in the position to which you have been nominated. None.

4. Describe any activity during the past 10 years in which you have engaged for the purpose of directly or indirectly influencing the passage, defeat or modification of any legislation or affecting the administration and execution of law or public policy. I have worked as congressional staff for both a Member of the House and a Senator. I have also worked for two House Committees. In each capacity I worked to write and pass as well as defeat numerous bills.

I also served as director of the Washington office for the Association of California Water Agencies. In that capacity, I worked on Federal legislative matters that impacted California's municipal and agricultural water agencies.

5. Explain how you will resolve any potential conflict of interest, including any that may be disclosed by your responses to the above items. Through my ethics agreement, I have resolved any potential conflicts of interest.

6. Do you agree to have written opinions provided to the Committee by the designated agency ethics officer of the agency to which you are nominated and by the Office of Government Ethics concerning potential conflicts of interest or any legal impediments to your serving in this position? Yes.

D. LEGAL MATTERS

1. Have you ever been disciplined or cited for a breach of ethics for unprofessional conduct by, or been the subject of a compliant to any court, administrative agency, professional association, disciplinary committee, or other professional group? If so, provide details. No.

2. Have you ever been investigated, arrested, charged or held by any Federal, State, or other law enforcement authority for violation of any Federal, State, county, or municipal law, regulation or ordinance, other than a minor traffic offense? If so, provide details. No.

3. Have you or any business of which you are or were an officer ever been involved as a party in interest in an administrative agency proceeding or civil litigation? If so, provide details. No.

4. Have you ever been convicted (including pleas of guilty or *nolo contendere*) of any criminal violation other than a minor traffic offense? No.

5. Please advise the Committee of any additional information, favorable or unfavorable, which you feel should be considered in connection with your nomination. No legal issues of note.

E. RELATIONSHIP WITH COMMITTEE

1. Will you ensure that your department/agency complies with deadlines set by congressional committees for information? Yes.

2. Will you ensure that your department/agency does whatever it can to protect congressional witnesses and whistleblowers from reprisal for their testimony and disclosures? Yes.

3. Will you cooperate in providing the committee with requested witnesses, to include technical experts and career employees with firsthand knowledge of matters of interest to the committee? Yes.

4. Please explain how you will review regulations issued by your department/agency, and work closely with Congress, to ensure that such regulations comply with the spirit of the laws passed by Congress. N/A. The Office of Science and Technology Policy is not a regulatory agency.

5. Describe your department/agency's current mission, major programs, and major operational objectives. OSTP's continuing mission is set out in the National Science and Technology Policy, Organization, and Priorities Act of 1976 (Public Law 94-282). It calls for OSTP to: "Serve as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal Government."

The Act authorizes OSTP to: Advise the President and others within the Executive Office of the President on the impacts of science and technology on domestic and international affairs; Lead an interagency effort to develop and implement sound science and technology policies and budgets; Work with the private sector to ensure Federal investments in science and technology contribute to economic prosperity, environmental quality, and national security; Build strong partnerships among Federal, State, and local governments, other countries, and the scientific community; Evaluate the scale, quality, and effectiveness of the Federal effort in science and technology.

6. Are you willing to appear and testify before any duly constituted committee of the Congress on such occasions as you may be reasonably requested to do so? Yes.

F. GENERAL QUALIFICATIONS AND VIEWS

1. How have your previous professional experience and education qualified you for the position for which you have been nominated. Science and technology have been at the heart of my career in policy. Before joining OSTP as Chief of Staff in March of 2001, I spent 6 years on the staff of the House Science Committee. Most recently, I was Deputy Chief of Staff for the Committee. In that position I was exposed to and had responsibility for helping to coordinate the Committee's policy on virtually all Federal civilian science and technology programs. I also continued to be the Committee's chief point of contact with the private sector on technology policy. Prior to becoming Deputy Chief of Staff, I served as Staff Director for the Committee's Subcommittee on Technology. In that position I worked on, and was responsible for, all technology issues within the Committee's jurisdiction including cyber security, technology transfer, the Federal role in setting standards, and information technology research and development.

2. Why do you wish to serve in the position for which you have been nominated? I have always been interested in matters of science and technology policy. Virtually every aspect of my career to date has revolved around science and/or technology pol-

icy. Our Nation's ability to develop and commercialize new technologies faster than any other country in the world has contributed greatly to America's economic prosperity. The often cited figure that that the information technology sector accounted for nearly a third of U.S. economic growth from 1996 and 2000, while accounting for only 7 percent of the economy, is just the most recent example of how technology impacts the economy. The recent downturn in the information technology sector does not change the fact that information technology has fundamentally altered the way in which we live and do business. I firmly believe that from biotechnology to nanotechnology to information technology, the best is yet to come.

From both an economic and a social standpoint, technical innovation improves the world we live in. I would like to participate in developing and maintaining the policies that help maintain our Nation's leadership in innovation.

3. What goals have you established for your first 2 years in this position, if confirmed? My goals mirror those of OSTP's Director to ensure: (1) that America's science and technology assets are fully available in the Nation's struggle to eliminate terrorism as a threat to our national security; (2) that America's science and technology enterprise is sustained and nurtured; that education in science math, and engineering is strong and available to all Americans; and (3) that the Federal Government continues to play its vital partnership role in the Nation's science and technology effort.

Specifically, with respect to technology policy, I hope to inform the Administration's decisionmaking process with the technical knowledge required to make sound policy decisions that will facilitate the development of (1) counter terrorist measures, (2) important technological advances such as the roll-out of high speed Internet, and (3) increased technology transfer from the Federal Government to the private sector and continued private sector investment in R&D.

4. What skills do you believe you may be lacking which may be necessary to successfully carry out this position? What steps can be taken to obtain those skills? I believe I have the skills to successfully carry out the duties of this position, but no individual can be an expert in every technological field. As with all my prior assignments requiring a very broad knowledge base, I will rely on my expert staff, outside advisory bodies, and the scientific and technology communities to leverage my knowledge on individual issues.

5. Who are the stakeholders in the work of this agency? Technology and university communities; Federal research agencies; scientific, engineering and technology associations; private and Federal scientists and engineers.

6. What is the proper relationship between your position, if confirmed, and the stakeholders identified in question No. 10? My role would be to reach out to, assess and, as appropriate, integrate the ideas and knowledge base of these stakeholders into the Administration's policymaking process.

7. The Chief Financial Officers Act requires all government departments and agencies to develop sound financial management practices similar to those practiced in the private sector. (a) What do you believe are your responsibilities, if confirmed, to ensure that your agency has proper management and accounting controls? I will assist the OSTP Director, as requested, in meeting the requirements of the Federal Managers' Financial Integrity Act of 1982 (Integrity Act) which requires every Executive Branch agency to report annually on the status of management controls to the President.

The annual review of management controls allows OSTP the opportunity to reassess its mission and procedures to determine whether the controls in place are adequate to manage them.

(b) What experience do you have in managing a large organization? I have held a number of management positions. Prior to my nomination, I was Chief of Staff of OSTP, and responsible for the day-to-day operations of the office, including the management of OSTP's budget and staff. As Deputy Chief of Staff of the Science Committee I, along with the Chief of Staff, managed the Majority staff. In that position, I was responsible for staff performance reviews. As Staff Director of the Committee's Technology Subcommittee, I had direct day-to-day responsibility for the Subcommittee's Majority staff.

8. The Government Performance and Results Act requires all government departments and agencies to identify measurable performance goals and to report to Congress on their success in achieving these goals. (a) Please discuss what you believe to be the benefits of identifying performance goals and reporting on your progress in achieving those goals. I support the Government Performance and Results Act and its application to research and development programs. That being said, research, in particular basic research, is hard to measure. Recognizing the inherent difficulty in measuring success, I will work with the OSTP Director and my fellow

Associate Director to examine appropriate criteria for Federal investment in research as laid out in the recently released President's Management Agenda.

(b) What steps should Congress consider taking when an agency fails to achieve its performance goals? Should these steps include the elimination, privatization, downsizing or consolidation of departments and/or programs? Performance matters. I believe that to the extent that individual programs or agencies do not meet appropriate performance criteria, all the options you have outlined should be considered. Careful attention, however, should be paid to why the milestones were missed or made. Agencies who are willing to sign-up for stretch-goals should not necessarily be penalized for slight underperformance while others agencies that propose more easily achievable metrics should not automatically get rewarded.

(c) What performance goals do you believe should be applicable to your personal performance, if confirmed? Provide sound, timely, clear, and accurate advice to the Director of OSTP and through him to the President and others within the Executive Office of the President on topics where technology can have an impact on domestic and international affairs, and in areas where Federal action has the potential to advance or impede technological progress.

9. Please describe your philosophy of supervisor/employee relationships. Generally, what supervisory model do you follow? Have any employee complaints been brought against you? I believe in a collaborative working arrangement with my staff. I also believe in empowering staff to make decisions and take actions on matters that they have been assigned. I believe staff must have a clear understanding of their responsibilities and the limits of their authority and feel accountable for their actions or inaction. I also believe in an open door policy to allow staff to address concerns with any policy or management decisions.

To my knowledge no employee complaints have been brought against me.

10. Describe your working relationship, if any, with the Congress. Does your professional experience include working with committees of Congress? If yes, please describe. As a former Committee staff member, I have had a close and personal relationship with Congressional Committees. I hope to build on this relationship if I am confirmed.

11. Please explain what you believe to be the proper relationship between yourself, if confirmed, and the Inspector General of your department/agency. The Executive Office of the President does not have an Inspector General.

12. Please explain how you will work with this Committee and other stakeholders to ensure that regulations issued by your department/agency comply with the spirit of the laws passed by Congress. The Office of Science and Technology Policy is not a regulatory agency.

13. In the areas under the department/agency's jurisdiction, what legislative action(s) should Congress consider as priorities? Please state your personal views. I share the Director's support for ensuring that science and technology are factored appropriately into all relevant legislation. I believe that the Administration and Congress have been on the right track with respect to legislation impacting technology. Prioritizing education reform, to promote a technologically literate society and workforce; increasing funding for basic research, to provide the seed corn for future discovery; and incentivising private sector research through the research and experimentation tax credit, which I believe should be made permanent, are all important legislative priorities. If confirmed, I look forward to working with the Committee to continue to improve on these important goals.

14. Within your area of control, will you pledge to develop and implement a system that allocates discretionary spending based on national priorities determined in an open fashion on a set of established criteria? If not, please state why. If yes, please state what steps you intend to take and a timeframe for their implementation. Yes. I support expanded use of competitive merit based review processes such as peer review to help define funding priorities within scientific and technological fields.

Senator WYDEN. Dr. Olsen.

STATEMENT OF KATHIE L. OLSEN, PH.D., NOMINEE TO BE AN ASSOCIATE DIRECTOR OF THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Dr. OLSEN. Members of the Committee, Senator Wyden, as you noted, I grew up in Portland, and I went to Cleveland High School. I bring this to your attention, not because it was in your House district, but because every day I entered school through a door that

had the engraved statement, "What you are to be, you are now becoming."

I thought about that statement a lot throughout the years. I was one of only two girls in my science class in a class of over 400 students, and one of three in my advanced math class, senior class, but there were four in senior math my junior year.

One thing was clear to me each day when I entered the door at Cleveland High School was whatever I was becoming, it was clearly not a scientist, because I hated science in high school. It was actually the start of my sophomore year of college when the only course—and I do mean the only course—that I could fit into my schedule was general biology. I'm here today, because, along with physiological psychology, it became my favorite class. And I believe it was because the professors were outstanding teachers and mentors. I knew then that I was becoming a neuroscientist. And, indeed, I earned my Ph.D. in 4 years, did a 1-year postdoctoral fellow at Harvard Medical School and started my academic career at SUNY-Stony Brook with NIH grants to support my research program.

A few years later, Dr. Alan Leshner, who was then at the National Science Foundation, but now is the head of AAAS, called to see whether I would consider the possibility of becoming a visiting scientist to oversee some behavioral neuroscience programs. By accepting, I could maintain my lab at SUNY-Stony Brook, I could carry out a research project at NIH using incredible computer equipment that would be impossible in my own lab, and also gain experience in managing grants programs. I was beckoned to Washington.

The experience opened my eyes to the service in the government, because, within a short time, I realized that I could do more at NSF to promote and enhance research and education, to support the careers of beginning scientists, women, and under-represented minorities than I could ever accomplish in my entire career as a laboratory scientist.

Vannever Bush's statement in 1945 said that "scientific progress is one essential key to our security as a Nation to our better health, to more jobs, to a higher standard of living, and to our cultural progress." It still holds true today. And it's for these reasons that we must continue to make the right investments in science and technology funding, promote partnerships between government, academia, and industry, strengthen our Nation's research infrastructure, and develop education programs and opportunities that excite, engage, enlist, and train the next generation of U.S. scientists and engineers. It is for these reasons that I wish to serve in the position for which I've been nominated.

Chairman Wyden and Members of the Committee, it's a privilege and an honor to appear before you today as the President's nominee to be the Associate Director for Science in the Office of Science and Technology Policy.

I'd like to briefly highlight three issues that I believe are critically important to sustain our Nation's leadership in research development. A balanced R&D portfolio, a strong science and technology infrastructure, and education. If I'm confirmed, in my role as Associate Director of the Office of Science and Technology Pol-

icy, I am committed to continuing OSTP's coordination of a broad and balanced Federal research program.

As a neuroscientist, I'm very aware that my field has prospered not only by the increased support from NIH, but through advances in computer science, physics, chemistry, and engineering. More money, however, doesn't necessarily translate into more results or scientific or technological breakthroughs and advances. It's important to prioritize our science and technology investments, especially with respect to potential scientific and education opportunities to maximize the return on the taxpayer's dollar.

The second issue, which isn't very exciting, is our aging research infrastructure at our Federal laboratories and our college and universities. As NASA's Chief Scientist, I spent days of discussion on this very issue. I also chaired an NSF panel reviewing grants to renovate research laboratories at colleges and universities. We need to recognize that the state-of-the-art instrumentation and modernization of infrastructure are enablers of the research enterprise and, therefore, play a vital role in our science and technology policy.

Finally, an immediate challenge is science education. Science education is vital for ensuring a public understanding of math and science issues for our citizens. We need to ensure that all Americans, whether the go to school in Two Dot, Montana—if Senator Burns was here, he could tell you where Two Dot, Montana is, or Prairie City, Oregon, or Boston, Massachusetts—have a strong science and math understanding. This is even more important today, since science and technology is becoming an intimate part of all our daily lives.

But science education also needs to be the driver to excite, enlist, and train the science and technology workforce needed to sustain our Nation's leadership and innovation in the 21st century. Recently, concerns have been expressed by our R&D industries, our Federal science agencies, about the number of U.S. students majoring in math, science, and engineering. And for even a longer time—and you pointed this out in your statement—we're concerned about the under-representation and under-utilization of women and minorities in many fields of science.

If I'm confirmed, I look forward to working on these issues and others that contribute to a strong and robust science and technology policy. In closing, I'd like to say those words over the door at Cleveland High School are still appropriate, for we're always changing, evolving, and adapting. But the one thing that is constant is my commitment to the advancement of science, research, and education and also welcoming new challenges and opportunities consistent with this goal.

Thank you again for your consideration.

[The prepared statement and biographical information of Dr. Olsen follow:]

PREPARED STATEMENT OF KATHIE L. OLSEN, PH.D., NOMINEE TO BE AN ASSOCIATE DIRECTOR OF THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Mr. Chairman and Members of the Committee, it is a privilege and an honor to appear before you today as the President's nominee to be the Associate Director for Science of the Office of Science and Technology Policy (OSTP). If I am confirmed, I will have the honor of serving the President, his science advisor, Dr. John

Marburger, and of working with you and your fellow Members of Congress to ensure that our strong national policy, which continues America's leadership in research and development, provides the underpinning of our investments in science and technology.

I believe that everyone in this room would agree with the 1945 statement by Vannevar Bush, author of the report titled "The Endless Frontier" which led to the establishment of the National Science Foundation. He said: "Scientific progress is one essential key to our security as a Nation, to our better health, to more jobs, to a higher standard of living, and to our cultural progress." These words hold true today. Indeed in an October 8, 2001 *New York Times* letter to the editor, Dr. Leon M. Lederman, Director Emeritus of Fermilab and a 1998 Nobel Laureate in Physics wrote: "Support of basic research offers a double-whammy of a solid payback to the Treasury of between 30 percent and 60 percent per year (after a waiting period of 5 to 10 years), as well as an array of new knowledge and technologies that create wealth, add to human health and longevity, and help fulfill human potential."

It is for these reasons that we must continue to make the right investments in science and technology (S&T) funding; promote partnerships between government, academia, and industry; strengthen our Nation's research infrastructure; and develop education programs and opportunities that excite, engage, enlist, and train the next generation of U.S. scientists and engineers. It is for these reasons that I wish to serve in the position for which I have been nominated.

If I am confirmed as Associate Director for Science, I will work closely together with Dr. Marburger and the Associate Director for Technology to achieve these goals.

OSTP has two primary responsibilities: 1. To advise the President on S&T; and 2. To provide leadership and coordination for our government's role in the national S&T enterprise.

Towards this end, we must ensure that our S&T portfolio is responsive to Presidential and Congressional intent, that our cross-agency activities are well coordinated, and that our research and development (R&D) investments reflect our priorities and are efficiently used.

If I am confirmed, in my role as Associate Director for Science, I am committed to continuing OSTP's coordination of a broad and balanced Federal research portfolio that challenges the frontiers of scientific knowledge, yet is based on the excellence defined by a robust peer review process. This coordination requires extensive communication among the Federal science agencies, colleges and universities, professional societies, State and local governments, and the private sector. OSTP will continue to be instrumental as a liaison and facilitator, integrating ideas and advice to help establish our science and technology priorities. Dr. Marburger has established a flexible organization to provide for better integration across interdisciplinary research questions, such as nanoscience, climate change research, and genomics, as well as international collaborations where appropriate.

If I am confirmed, one of my first actions will be to begin to co-chair National Science and Technology Committees (NSTC), such as the Committee on Science, the Committee on Environment and Natural Resources, and the Committee on International Science, Engineering, and Technology. This committee structure, along with ad hoc working groups within the NSTC, has proven to be successful in bringing together all relevant science agencies and departments on cross-cutting research and education activities that advance our Nation's science and technology priorities. As Dr. Marburger noted in his statement when he appeared before this Senate Committee on October 9, 2001: "OSTP has a unique position and perspective that enables us to assess the vast sweep of scientific endeavors of our various Federal agencies and departments. The complexity of this activity, the diversity of its impacts, the intensity of its many advocates mask an underlying machinery of the scientific enterprise whose parts must work in balance to effect the smooth functioning of the whole. Our joint responsibility is to identify the crucial parts, evaluate their effectiveness, and ensure their continued strength through all the mechanisms available to national government."

In the FY03 budget, the President has set forward his agenda that reflects the change in priorities by focusing on three primary goals: winning the war on terrorism, protecting the homeland, and reviving our economy. Given the importance, as well as the vital role that science plays for our Nation and our lives, the President's research and development (R&D) budget is greater than $100 billion—up 8 percent overall from last year and representing the largest requested increase for R&D in over a decade. There is always a continual need for re-examining the role and priorities of the Federal S&T basic and applied research programs and their interaction with the budget.

Over the past years, concerns are growing about ensuring a balanced research portfolio. Indeed, we all recognize that advances in one field, such as medicine, are dependent upon knowledge gained in other disciplines. One of my favorite examples as NASA Chief Scientist was to tell how the charge-coupled devices in the Hubble Space Telescope that convert a distant star's light directly into digital images have been adapted to aid in the detection of breast cancer in women. While the new technology continues to be refined, it can image breast tissue more clearly and efficiently than conventional mammograms. NASA developed a joint program with the National Institutes of Health and the Office on Women's Health in the Department of Health and Human Services, to use this technology to develop digital mammography that detects tumors as small as 0.1 mm. More money, however, doesn't necessarily translate into more results or scientific and/or technological breakthroughs. It is important to prioritize our S&T investments, especially with respect to scientific opportunities, to maximize the return.

Recently, Dr. Marburger along with the Director of the Office of Management and Budget issued a memorandum (May 30, 2002) to guide Federal agencies toward preparation of their respective FY04 budget. The memo states "The Administration will favor investments in Federal R&D programs that sustain and nurture America's S&T enterprise through the pursuit of specific agency missions and stewardship of critical research fields and their enabling infrastructure . . . Agencies with responsibilities for specific fields of science and engineering should consider the impact of their research investments on the sustained viability of these disciplines for national priorities." This memorandum sends the message that the priority setting process will carefully consider the importance of a well-balanced R&D portfolio.

Another immediate challenge is our aging research infrastructure at our Federal laboratories and colleges and universities. We need to recognize that state-of-the-art instrumentation and modernized infrastructure are enablers of the research enterprise and, therefore, play a vital role in furthering our S&T objectives. The health of our research institutions and continued advancement in instrumentations are critical variables in sustaining our leadership in S&T. The fiscal year 2004 Interagency R&D Priority Memorandum also addresses this important issue, stating that "Some agencies operate programs or facilities whose capabilities are important to the missions of other agencies as well as their own. Stewardship and continued development of these facilities and associated instrumentation can serve a range of scientific and engineering disciplines. These capabilities consequently carry an interagency coordination responsibility and will be given special consideration in the budget preparations. OSTP, through the NSTC process, will evaluate how best to ensure the availability of instrumentation and facilities for priority S&T needs."

Finally, an immediate challenge is science education. Science education is vital for ensuring a public understanding of math and science issues for our citizenry, as well as for developing the strong S&T workforce needed to sustain our Nation's leadership and innovation in the 21st Century. Growing concerns have been expressed by our R&D industries, our Federal laboratories, and our colleges and universities about the number of U.S. students majoring in math, science, and engineering—especially the under-representation and under-utilization of women and minorities in many fields. Congress and the Federal Government have recognized this important issue and new programs, such as the President's education blueprint "No Child Left Behind" and a new Math and Science Partnership Initiative have become reality. Our Nation is concerned about the shortage of qualified math and science teachers, especially in disadvantaged school districts, and has developed a student-loan forgiveness program for math and science teachers. Our colleges and universities are developing programs to introduce students to research and instill an inspiration for discovery beginning at the undergraduate level. Congress established the Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development (P.L. 105-255, approved October 14, 1998), in which I served as a Federal representative, that set forth recommendations to help build a diverse workforce capable of meeting our Nation's S&T workforce challenge. OSTP established a "Global Science and Technology Week," occurring in early May, to help stimulate student interest in S&T. The Federal Government has recognized this challenge; and I believe it is important for OSTP to strengthen partnerships among Congress, Federal, State and local government, school systems, professional societies, academia, and the private sector to maintain programs that work, and develop and foster new approaches that will ensure a strong and robust science, technology and engineering enterprise that represents the talents of all Americans.

In closing, I would like to say that throughout my career, I have been committed to the advancement of science, research, and education and have always welcomed new challenges and opportunities consistent with this goal. I have carried out scientific research supported by Federal grants, published research articles, edited a

book, organized international research conferences, gave numerous scientific presentations, and lectured students and integrated their education program within my neuroscience research program. I have served on Federal research review panels, as well as directed Federal research programs within and across scientific disciplines, including at the Science and Technology Centers the National Science Foundation. I have led and managed research organizations setting scientific and budgetary priorities and policies. I have developed and fostered collaborations and programs across disciplines and Federal scientific agencies. I have gained legislative experience, especially with the Senate Subcommittee on Science, Technology and Space as a Brookings Institution Legislative Fellow in the office of Senator Conrad Burns. I have given numerous presentations at elementary, middle, and high schools. I also serve as a mentor.

I believe this unique combination of education and research accomplishments, executive and legislative positions, a record of administrative leadership, and knowledge of the challenges facing colleges and universities and our government will allow me to successfully meet the responsibilities of this important and prestigious position.

Mr. Chairman and Members of the Committee, thank you again for the consideration. I enthusiastically look forward to the prospect of working with Dr. Marburger and you, listening to your advice and direction, to foster a continually strong and vibrant R&D research and education portfolio. As Dr. Lederman stated in his *New York Times*' letter to the editor: "The combination of education and research may be the most powerful capability the Nation can nurture in times of stress and uncertainty."

A. BIOGRAPHICAL INFORMATION

1. Name: Kathie Lynn Olsen (Kate).

2. Position to which nominated: Associate Director of the Office of Science and Technology Policy.

3. Date of nomination: December 5, 2001 (intent to nominate); March 20, 2002 (sent to Senate).

4. Address: Office of Science and Technology, Executive Office of the President, Washington, DC, 20502.

5. Date and place of birth: August 3, 1952, Portland, Oregon.

6. Marital status: Single.

7. Names and ages of children: None.

8. Education: Cleveland High School, Portland, OR: 1966-1970, High School Diploma; Chatham College, Pittsburgh, PA: 1970-1974, Bachelors of Science, Majors: Biology & Psychology; University of California at Irvine, Irvine, CA: 1974-1979, Doctor of Philosophy in Neuroscience; Harvard Medical School, Boston, MA: 1979-1980, Postdoctoral Fellow.

9. Employment record: American Honda, Inc., Portland, OR, Warehouse Worker 1971-1974 (Summers); State University of New York—Stony Brook, Stony Brook, NY, Research Scientist, Long Island Research Institute 1980-1983; Res. Assistant Professor, Department of Psychiatry & Behavioral Science 1982-1985; Assistant Professor, Department of Psychiatry & Behavioral Science 1985-1989; National Science Foundation, Washington, DC & Arlington, VA, Associate Director, Psychobiology/Integrative Neural Systems Programs, Directorate for Biological, Behavioral & Social Sciences (BBS) July 1984-1986; Director, Neuroendocrinology Program (Frog.), BBS Sept. 1988-Dec. 1992; Director, Neuroendocrinology Prog., Directorate for Biological Sciences (BIO) Dec. 1991-1994; Leader, Neuroscience Cluster, BIO Dec. 1991-Oct. 1993; Acting Deputy Director, Integrative Biology and Neuroscience Division, BIO Oct. 1993-1995; Special Assistant—Neuroscience, Office of the Assistant Director, BIO Oct. 1995-Jan. 1996; Senior Staff Associate, Office of Integrative Activities of the Director Dec. 1997-May 1999; Office of Senator Conrad Burns of Montana, Washington, DC, Brookings Institution LEGIS Fellow Jan. 1996-Oct. 1996; NSF detail Oct. 1996-Nov. 1997; George Washington University, Washington, DC, Adjunct Associate Professor, Department of Microbiology 1989-1992; National Aeronautics and Space Administration (NASA) Washington, DC; Chief Scientist, May 1999-April 2002; Acting Associate Administrator for Biological and Physical Research, July 2000-March 2002.

10. Government experience: Member, Ad hoc NIH Site Visitor, HDMR, National Institute of Child Health and Human Development, NIH, 1985; Member, U.S. Air Force Centers of Excellence Review Panel, 1986; Member, NSF Presidential Young Investigator Panel, 1988; Co-Chair, NSF Facilities Competition Panel: Academic Research Infrastructure Program, 1992-1994; Member, NIH Site Visit Team to More-

house School of Medicine: National Institute of Neurological Disorders and Stroke, 1994; Executive Secretary, National Science and Technology Council Health, Safety, and Food's Subcommittee on Biomedical, Socio-cultural and Behavioral Science R&D, 1996-1997; Co-Chair of NASA Special Panel on Space Life Sciences Developmental Biology, 1998-1999; Member, NSF Minority Graduate Education Advisory Panel, 1998; Member, Presidential Federal-Wide Working Group for United Nations Meeting on Women, 2000; Member of Interagency Steering Committee to the Commission of the Advancement of Women And Minorities in Science, Engineering, and Technology Development "The Morella Commission" 1999-2000.

11. Business relationships: Present Member, External Advisory Board for AAAS Science Magazine Next Wave, Washington, DC [1]; Present Member, National Advisory Board for Burns Telecommunication Center, Montana State University, Bozeman, MT [1]; Present Member and Chair, Advisory Board for NSF Science & Technology Center in Behavioral Neuroscience, Emory University, Atlanta, GA [1]; Present Member, Advisory Board, National Space Science & Technology Center, Huntsville, AL [1]; Previous Member, Advisory Board for the School for Computational Sciences, George Mason University, Fairfax, VA; Previous Consulting Editor for *Hormones and Behavior*, Editorial Board Member; Previous Elected Board Member, Women in Aerospace; Previous Member of the Research Initiatives Committee of The Endocrine Society.

12. Memberships: Present Member of the following Professional Societies: American Association for the Advancement of Science; Behavioral Neuroendocrinology; The Endocrine Society; Women in Endocrinology; Society for Neuroscience; Women In Neuroscience; Women in Aerospace.

13. Political affiliations and activities: (a) List all offices with a political party which you have held or any public office for which you have been a candidate. None.

(b) List all memberships and offices held in and services rendered to all political parties or election committees during the last 10 years. None.

(c) Itemize all political contributions to any individual, campaign organization, political party, political action committee, or similar entity of $500 or more for the past 10 years. Senator Conrad Burns of Montana: $2,500 (five $500 donations in 1997, 1998, 1999, 2000 and 2001).

14. Honors and awards: Scholarships & Fellowships: College Scholarship with financial package, Chatham College 1970-1974; Graduate Traineeships, Dept. of Psychobiology, Univ. California at Irvine 1974-Jan. 1979; Endocrine Fellow, Harvard Medical School NIH Training Grant 1979-Jan. 1980; Honorary Degrees: Clarkson University, May 2002, Special Recognitions for Outstanding Service or Achievements: Scientific Societies: International Behavioral Neuroscience Society 1998, For important contributions to behavioral neuroscience; Society for Behavioral Neuroendocrinology 1998, For outstanding contributions to development of research & education initiatives of Neuroendocrinology in the field of Neuroendocrinology; Government: National Aeronautics and Space Administration, NASA's Outstanding Leadership Medal 2001; National Science Foundation, Directors' Superior Accomplishment Award 1995, For exceptional Division Program Leadership and for service to NSTC; Director's Award of Excellence, 1994, For outstanding accomplishments in program management and administration; General Workforce System Outstanding Performance Awards, 1990-1998; Certificate of Appreciation for Outreach Activities 1992-1995; Academia: University of California—Irvine, University of California System Citation for Excellence in Teaching 1978; Edward A. Steinhaus Memorial Award for Excellence in Teaching 1976; Chatham College, Phi Beta Kappa; B.S. degree awarded with honors, 1974; Cornerstone Award 1999; Barnard College, Barnard Medal of Distinction, 2000, College's Most Significant Recognition of Individuals for demonstrated excellence in conduct of their lives and careers.

15. Published writings: Appendix 1 provides a listing of publications in professional journals and books in the field of neuroscience and biology.

16. Speeches: Appendix 1 also provides a listing, of selected presentations. Appendix 2 includes copies of the overheads used in selected presentations.

17. Selection: (a) Do you know why you were chosen for this nomination by the President? I presume I was chosen for this nomination because of my extensive experience and visibility in the science policy and academia areas.

(b) What do you believe in your background or employment experience affirmatively qualifies you for this particular appointment? I have carried out scientific research supported by Federal grants, published research articles, edited a book, organized international research conferences, gave numerous "invited" scientific presentations, and lectured students and integrated their activities within my NIH-supported neuroscience research program. I have served as director of Federal research

[1] Will resign if confirmed.

programs within and across scientific disciplines, including the Science and Technology Centers at the National Science Foundation.

I have led and managed research organizations setting scientific and budgetary priorities and policies. I have fostered collaborations and programs across the Federal scientific agencies. I gained legislative experience, especially with the Senate Subcommittee on Science, Technology & Space as a Brookings Institution Legis Fellow in the Office of Senator Conrad Burns from Montana.

B. FUTURE EMPLOYMENT RELATIONSHIPS

1. Will you sever all connections with your present employers, business firms, business associations or business organizations if you are confirmed by the Senate? Yes. I will resign my position at NASA.

2. Do you have any plans, commitments or agreements to pursue outside employment, with or without compensation, during your service with the government? If so, explain. No.

3. Do you have any plans, commitments or agreements after completing government service to resume employment, affiliation or practice with your previous employer, business firm, association or organization? A SES career appointee who receives a Presidential appointment is entitled to be reinstated to the SES after the Presidential appointment ends if the Presidential appointment was to a civil service position outside the SES; there was no break in service between the career SES appointment and the Presidential appointment; and the executive leaves the Presidential appointment for reasons other than misconduct, neglect of duty, or malfeasance. Based on this information concerning Presidential Appointments of Career SES members, NASA Officials indicated that they would try to find a suitable position for me at NASA if, at the end of my OSTP tenure, I decide to purse this course. At this time, however, no commitment exists on the part of myself or NASA.

4. Has anybody made a commitment to employ your services in any capacity after you leave government service? No, see above.

5. If confirmed, do you expect to serve out your full term or until the next Presidential election, whichever is applicable? Yes.

C. POTENTIAL CONFLICTS OF INTEREST

1. Describe all financial arrangements, deferred compensation agreements, and other continuing dealings with business associates, clients or customers. None.

2. Indicate any investments, obligations, liabilities, or other relationships which could involve potential conflicts of interest in the position to which you have been nominated. While I foresee no real conflict of interest, I hold 400 shares in Intel Corp, an investment chosen since it is a company within my home State of Oregon. I also hold 147.2 shares in T. Rowe Price Science & Technology Mutual Fund that I purchased for $5,000 on 8/12/97 and have not bought or sold this fund since the initial purchase. My Intel holdings qualify for the de minimis exemption, and the Science and Technology Fund is an "excepted investment fund," under Office of Government Ethics regulations. These holdings are addressed in my ethics agreement.

3. Describe any business relationship, dealing, or financial transaction which you have had during the last 10 years, whether for yourself, on behalf of a client, or acting as an agent, that could in any way constitute or result in a possible conflict of interest in the position to which you have been nominated. None.

4. Describe any activity during the past 10 years in which you have engaged for the purpose of directly or indirectly influencing the passage, defeat or modification of any legislation or affecting the administration and execution of law or public policy. As NASA Chief Scientist and Acting Associate Administrator for Biological and Physical Research, I meet with relevant staff of House and Senate authorizers and appropriators regarding the importance of the NASA science programs and also worked with the Office of Management and Budget in preparation of the agency's budget. I represented the President's budget to these organizations. In addition, as a fellow in the Office of Senator Conrad Burns from Montana (Jan. 1996-Nov. 1997) I worked on science, technology, space, and education related activities as related to his committee assignments and State interests.

5. Explain how you will resolve any potential conflict of interest, including any that may be disclosed by your responses to the above items. My ethics agreement and SF-278 fully disclose potential conflicts of interests and how I will deal with them, if they shall arise.

6. Do you agree to have written opinions provided to the Committee by the designated agency ethics officer of the agency to which you are nominated and by the Office of Government Ethics concerning potential conflicts of interest or any legal impediments to your serving in this position? Yes.

D. LEGAL MATTERS

1. Have you ever been disciplined or cited for a breach of ethics for unprofessional conduct by, or been the subject of a compliant to any court, administrative agency, professional association, disciplinary committee, or other professional group? If so, provide details. No.

2. Have you ever been investigated, arrested, charged or held by any Federal, State, or other law enforcement authority for violation of any Federal, State, county, or municipal law, regulation or ordinance, other than a minor traffic offense? If so, provide details. No.

3. Have you or any business of which you are or were an officer ever been involved as a party in interest in an administrative agency proceeding or civil litigation? If so, provide details. No.

4. Have you ever been convicted (including pleas of guilty or *nolo contendere*) of any criminal violation other than a minor traffic offense. No.

5. Please advise the Committee of any additional information, favorable or unfavorable, which you feel should be considered in connection with your nomination. Throughout my career, I have been committed to the advancement of science, research, and education and have always welcomed new challenges and opportunities consistent with this goal. I believe that my unique combination of education and research accomplishments, executive, and legislative positions, record of administrative leadership, and knowledge of the challenges facing colleges and universities and our government will allow me to successfully meet the responsibilities of this important and prestigious position.

I enthusiastically look forward to working with this Committee to ensure that the United States continues to be the world's leader in Science.

E. RELATIONSHIP WITH COMMITTEE

1. Will you ensure that your department/agency complies with deadlines set by congressional committees for information? Yes.

2. Will you ensure that your department/agency does whatever it can to protect congressional witnesses and whistle blowers from reprisal for their testimony and disclosures? Yes.

3. Will you cooperate in providing the committee with requested witnesses, to include technical experts and career employees with firsthand knowledge of matters of interest to the committee? Yes.

4. Please explain how you will review regulations issued by your department/agency, and work closely with Congress, to ensure that such regulations comply with the spirit of the laws passed by Congress. The Office of Science and Technology Policy is not a regulatory agency.

5. Describe your department/agency's current mission, major programs, and major operational objectives. The Office of Science and Technology Policy (OSTP) continuing mission is set out in the National Science and Technology Policy, Organization, and Priorities Act of 1976 (Public Law 94-282). It calls for OSTP to: "Serve as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal Government."

The Act authorizes OSTP to: Advise the President and others within the Executive Office of the President on the impacts of science and technology on domestic and international affairs; Lead an interagency effort to develop and implement sound science and technology policies and budgets; Work with the private sector to ensure Federal investments in science and technology contribute to economic prosperity, environmental quality, and national security; Build strong partnerships among Federal, State, and local governments, other countries, and the scientific community; Evaluate the scale, quality, and effectiveness of the Federal effort in science and technology.

6. Are you willing to appear and testify before any duly constituted committee of the Congress on such occasions as you may be reasonably requested to do so? Yes.

F. GENERAL QUALIFICATIONS AND VIEWS

1. How have your previous professional experience and education qualifies you for the position for which you have been nominated? As Chief Scientist at NASA I serve as the senior scientific advisor to the Administrator and my responsibilities include the overall budget content of NASA's broad science programs and ensuring that these programs are universally regarded as scientifically and technologically valid. In this position, I also serve as the principal interface with the national and international scientific community. As the Acting Associate Administrator for the Biological and Physical Research, I directly oversee an Enterprise with over 50 professional

and support staff and have managerial and supervisory experience. I also served for over 10 years at the National Science Foundation in various positions. My last position, in the Office of Integrative Activities of the Director, I was responsible for the Science and Technology Center Program. The Science and Technology Centers support innovation in the integrative conduct of research, education and knowledge (technical) transfer in all areas of science and engineering supported by NSF. Thus, this position enabled me to learn about and understand the research questions being addressed in all fields of science and engineering and the importance of integration with teaching and education. In my various positions, I have had the responsibility of serving as both an executive secretary and member of the National Science and Technology Council, chairing multi-agency task groups, and establishing inter-agency cooperation and grants programs.

Having served as a Brookings Institution LEGIS Fellow and then a NSF detail in the Office of Senator Conrad Burns, I gained valuable experience in a wide range of policy issues covered by the Senate Subcommittee on Science, Technology, and Space and also worked with staff of the appropriation subcommittees.

Prior to my Federal service, I was a faculty member at a medical school of a State university, carried out a peer-reviewed neuroscience research supported by the National Institutes of Health, and integrated my research program with teaching and education.

I believe that my unique combination of experience and training in academia and in both the Executive and Legislative branches of the government prepares me for the challenging responsibilities of this position.

2. Why do you wish to serve in the position for which you have been nominated? I strongly believe that scientific research and technology is vital to our Nation's future and economy. Science and technology are critical for the defense of our Nation, for exploring space, for the environment, for the health and well-being of our citizens, and it creates new knowledge which becomes the driving force for continued economic development and growth. Science and technology is an investment that pays off, both financially and socially. I strongly believe that the Office of Science and Technology Policy, working with Congress and the Federal R&D agencies, serves a vital function in ensuring the leadership in science and technology now and for the future.

3. What goals have you established for your first 2 years in this position, if confirmed? I will work closely with the Dr. John Marburger, Director of the Office of Science and Technology and the Associate Director for Technology to carry out the goals that Dr. Marburger stated, and which I strongly support, during his confirmation hearing. These goals are (1) to ensure that America's science and technology assets are fully available in the Nation's struggle to eliminate terrorism as a threat to our national security; (2) to ensure that America's science and technology enterprise is sustained and nurtured, that education in science math, and engineering is strong and available to all Americans; and (3) that the Federal Government continues to play its vital partnership role in the Nation's science and technology effort.

Specifically, with respect to science policy, I hope to inform the Administration's decisionmaking process with the knowledge that will enable science to play a strong role in the development of our policies, where appropriate, and to achieve our above goals while maintaining our core values that have enabled our Nation's R&D success. A major trend that we need to reverse now is the shortfall in talented individuals with science, engineering, and technical education and training.

4. What skills do you believe you may be lacking which may be necessary to successfully carry out this position? What steps can be taken to obtain those skills? I believe that I have the skills to successfully carry out the duties of the Associate Director for Science. Similar to my previous positions that required a very broad knowledge base, I will utilize the expertise of my staff, the National Science and Technology Committees, advisory groups, and the scientific, engineering and technology communities to enhance my expertise and knowledge on individual issues.

5. Who are the stakeholders in the work of this agency? The university community, the Federal agencies and their scientists and engineers, scientific societies, and the educational community.

6. What is the proper relationship between your position, if confirmed, and the stakeholders identified in question No. 10? Working with the Director for the Office of Science and Technology Policy, OSTP is the steward of their combined interests.

7. The Chief Financial Officers Act requires all government departments and agencies to develop sound financial management practices similar to those practiced in the private sector. (a) What do you believe are your responsibilities, if confirmed, to ensure that your agency has proper management and accounting controls? I will work with the Director of the Office of Science and Technology Policy to ensure that we meet the requirements of the Federal Managers' Financial Integrity Act of 1982

that requires every Executive Branch agency to report annually on the status of management controls to the President.

This annual review of management control allows OSTP the ability to reassess its mission and, more importantly, procedures to determine whether the appropriate controls are in place.

(b) What experience do you have in managing a large organization? As NASA Chief Scientist, I served as senior advisor to the Administrator and my responsibilities included oversight of the overall budget content of NASA science programs (approximately $4B budget). I participated in all of the key budget councils to help formulate NASA's annual budget submission. I also was accountable to the Administrator for the scientific and technological validity of the research programs. It was necessary to establish a new office and to hire a staff who could meet the challenges required to coordinate crossenterprise activities, including; both GRPA and developing and fostering new research initiatives. One accomplishment was defining and developing of NASA's role in biology which led to the establishment of a new research enterprise for Biological and Physical Research.

As the Acting Associate Administrator for the new Biological and Physical Research Enterprise, at the same time that I served as Chief Scientist, I was responsible for overseeing about 65 professional and support/administrative staff with a budget of $360 Million in FY01 that increased to over $800 Million in FY02. This also involved coordination with NASA Field Centers, JPL, the academic community, professional societies, and industry.

8. The Government Performance and Results Act requires all government departments and agencies to identify measurable performance goals and to report to Congress on their success in achieving these goals. (a) Please discuss what you believe to be the benefits of identifying performance goals and reporting on your progress in achieving those goals. Our citizens must be assured that tax dollars are being invested in programs that will produce the results that will ultimately benefit our lives. While we can all identify science and technology advances and results that have truly impacted our health and well-being, our defense programs, and our economy, research and development performance measures have been difficult to identify on a yearly basis, especially on performance measures applied to basic research programs. OSTP will continue to work with the Administration to examine appropriate criteria for Federal investment in research as laid out in the recently released President's Management Agenda.

(b) What steps should Congress consider taking when an agency fails to achieve its performance goals? Should these steps include the elimination, privatization, downsizing or consolidation of departments and/or programs? I agree with the Director that all options should be addressed, but any decision should be made on a case-by-case basis taking into consideration the importance of the goal to the agency's mission, how often the agency has failed to meet the goal, whether a plan is in place to meet the goal in a specific time period and budget allocation, etc.

(c) What performance goals do you believe should be applicable to your personal performance, if confirmed? Provide accurate, sound, timely, and clear advice, for which I am accountable to the Director of OSTP and others within the Executive Office of the President, on topics were science and technology can. have an impact on domestic and international affairs, and in areas where the Federal action has the potential to advance or impede scientific or technological progress.

9. Please describe your philosophy of supervisor/employee relationships. Generally, what supervisory model do you follow? Have any employee complaints been brought against you? Open communication with employees at every level within the organization characterizes my management philosophy. Thus, I have an open-door policy and have always been available to meet with employees at every level, under conditions that are clear to them and their supervisors. I establish clear roles, responsibilities, and accountabilities for all employees, and expect line managers to assume responsibility for every aspect of their work. I expect that employees will work independently on specific assignments and as a team to accomplish our stated goals. During more than 15 years of serving as a direct supervisor and leading teams or offices, I am aware of only one official complaint. This was an employment related decision that was raised from an individual concerning the entire group at NSF that had been responsible for the interview in which the outcome was that the individual did not get the position. It was resolved satisfactorily.

10. Describe your working relationship, if any, with the Congress. Does your professional experience include working with committees of Congress? If yes, please describe. Yes. In my position as Chief Scientist and Acting Associate Administrator for Biological and Physical Research, I meet with relevant staff of House and Senate authorizers and appropriators regarding the importance of the science programs at NASA and also worked with the Office of Management and Budget in preparation

of the agency's budget. I represented the President's budget to these organizations. In addition, as a fellow in the Office of Conrad Burns from Montana (Jan. 1996-Nov. 1997) I worked on science, technology, space, and education issues as related to his committee assignments and State interests. This included the Senate Committee on Commerce, Science and Transportation, its Subcommittee on Science, Space and Technology, and the Committee on Appropriations (most relevant was his assignment on the Subcommittee for VA, HUD and Independent Agencies).

11. Please explain what you believe to be the proper relationship between yourself, if confirmed, and the Inspector General of your department/agency. The Executive Office of the President does not have an Inspector General.

12. Please explain how you will work with this Committee and other stakeholders to ensure that regulations issued by your department/agency comply with the spirit of the laws passed by Congress. The Office of Science and Technology is not a regulatory agency.

13. In the areas under the department/agency's jurisdiction, what legislative action(s) should Congress consider as priorities? Please state your personal views. Below are three major areas where I believe that legislative action is important to maintain our leadership.

Science and Technology. It is important to ensure that science, engineering, and technology are considered in all relevant legislation. This includes legislation pertaining to such issues as economic competitiveness, volunteerism, energy, national security, public health, and education. We need to ensure that our legislation is based on the most up-to-date knowledge and/or promotes the further development of a balanced and strong science, engineering and technology programs.

Balance and Coordination in the R&D Portfolio. Science and technology research and development are interwoven and maintaining the U.S. leadership requires balanced support of many diverse fields. For example, advances in biomedical research and medical care have depended upon instrumentation, advances in computer information and new technology developed from research in the physical and engineering sciences. A national agenda for health care, education, energy and environmental protection, and national security requires coordination of programs and balanced funding across disciplines and agencies. I believe that we need to ensure that agencies with responsibilities for specific fields of science and engineering consider the impact of their research investments on the sustained viability of these disciplines for national priorities, including development of instrumentation and maintenance of facilities or programs.

Math and Science Education. Education is an important priority of our Administration's investment in America's future. Attention needs to be given to legislation that ensures both an educated public and the development of our future workforce in research and technology. Math and science and informal learning in the areas of research and technology require significant consideration.

14. Within your area of control, will you pledge to develop and implement a system that allocates discretionary spending based on national priorities determined in an open fashion on a set of established criteria? If not, please state why. If yes, please state what steps you intend to take and a timeframe for their implementation. Yes, I am a strong supporter of merit based/peer review.

Senator WYDEN. Thank you. Very good statement.

We're going to recognize Senator McCain.

Senator MCCAIN. Congratulations, Mr. Gregory. You have a very tough job ahead of you, particularly in the budgetary area. I know that you and Mr. O'Keefe are working very hard on that. It's something that we began to address in this Committee years ago, and unfortunately the budget has now lurched completely out of control.

Dr. Olsen and Mr. Russell, do you agree or disagree with this following statement: "Long-term observations confirm that our climate is now changing at a rapid rate. Over the 20th century, the average annual U.S. temperature has risen by almost 1 degree Farenheit, (0.6 degrees Celsius), and precipitation has increased nationally by 5 to 10 percent, mostly due to increases in heavy downpour. These trends are most apparent over the past few decades. The science indicates that the warming in the 21st century will be significantly greater than in the 20th century. Scenarios ex-

amined in this Assessment, which assume no major interventions to reduce continued growth of world greenhouse gas emissions, indicate that the temperatures in the U.S. will rise by about 5-9 degrees Farenheit, (3-5 degrees C), on average, in the next 100 years, which is more than the projected global increase."

That is a statement in the beginning and summary "Climate Change Impacts on the United States: the Potential Consequences of Climate Variability and Change," the Foundation National Assessments Synthesis Team, U.S. Global Change Research Program.

Do you agree or disagree with that statement, Dr. Olsen?

Dr. OLSEN. I just want to state that——

Senator MCCAIN. I'd like to know if you agree or disagree when you begin, because I'd like you to start out by answering the question.

Dr. OLSEN. Senator McCain, I think climate change——

Senator MCCAIN. I would like to know whether you agree or disagree with that question, or don't answer the question.

[No response.]

Senator MCCAIN. Mr. Russell, do you agree or disagree with this summary of the "Climate Change Impacts on the United States" report?

Mr. RUSSELL. Senator McCain, I'd love to answer that question. I must say——

Senator MCCAIN. If you're not going to answer the question, then don't answer the question. I will oppose both of your nominations until we get an answer to a simple, basic question, and I'll see if you'll answer——

Mr. RUSSELL. Senator McCain, may I say one thing just very quickly?

Senator MCCAIN. Yes.

Mr. RUSSELL. We, at the direction of this Committee, as much as every other——

Senator MCCAIN. I would like you to answer the question whether you agree or disagree with that statement. It's a pretty straightforward statement, and I would like to know if you agree or disagree. If you will not say that, then we'll just go on to the next question.

And it is unusual, by the way, to have witnesses, particularly here for confirmation, not to answer a rather simple straightforward question.

Dr. OLSEN. Sir?

Senator MCCAIN. In Dr. Marburger's statement before the Committee on July 11th, Dr. Marburger said, and I quote: "This is why reports such as the 2002 Climate Action Report do not claim to make predictions about future impacts. That report employs 'scenarios' that are invented to capture the range of results of multiple runs of different climate models with different ad hoc input assumptions. The scenarios are then used to make 'projections,' a word that is carefully defined in an important footnote . . . of the report . . . I fear that many readers of the Climate Action Report have mistaken its 'projections' for forecasts."

Have you read this report, Mr. Russell?

Dr. Olsen?

Mr. RUSSELL. Senator McCain, that's what I was about to say. I have not read that report. That's why I cannot answer that question.

Senator MCCAIN. You haven't read the report?

Mr. RUSSELL. It's not—climate change is not——

Senator MCCAIN. By the way, the quote I gave you was from the "Climate Change Impacts on the United States," not the "Climate Change Science: An Analysis of Key Questions," and it doesn't matter whether you've read it or not; it's a straigthforward statement, and I would like to know if you agree or disagree.

Now, have you or Dr. Olsen read this report?

Dr. OLSEN. I have read the report.

Senator MCCAIN. You've read the report.

Dr. OLSEN. And, Senator McCain——

Senator MCCAIN. If you've read the report—thank you, I'd like to go ahead with the questioning. Now, have you read page three of the report, which says, quote: "By how much will temperatures change over the next 100 years and where?" The answer: "Climate change simulations for the period 1990 to 2100, based on the IPCC emissions scenarios, yield a globally-averaged surface temperature increase by the end of the century of 1.4 to 5.8 degrees Celsius, (2.5 to 10.4 degrees Farenheit), relative to 1990. The wide range of uncertainty in these estimates reflects both the different assumptions about future concentrations of greenhouse gases and aerosols in the various scenarios considered by the IPCC and the differing climate sensitivities of various climate models used in the simulation." Quote: "The range of climate sensitivities implied by these predictions is generally consistent with previously reported values." Yet Dr. Marburger states that this report doesn't make predictions, when clearly, on page three, it says, and I quote again: "The range of climate sensitivities implied by these predictions is generally consistent with the previous reported values."

Did you read that part of the report, Dr. Olsen?

Dr. OLSEN. I have read the report. And what Dr. Marburger was referring to was the footnote that was in chapter six of that report. In that report, they listed a number of projections based on scenarios. And, in that case, if this would happen, then this would be the result. They were "what ifs."

Senator MCCAIN. Well, let me give you——

Dr. OLSEN. But I would like to go back to your——

Senator MCCAIN. Well, I'd like to continue. Well, then why is it that Dr. Marburger said—and I'm sorry that I had to leave the hearing early—"That's why reports such as the 2002 U.S. Climate Action Report do not claim to make predictions about future impacts." Maybe he was talking about, in his a view, a footnote. But no footnote—but it says it makes a prediction.

Dr. OLSEN. There were both predictions and projections within that report.

Senator MCCAIN. But Dr. Marburger says this is why reports such as the 2002 U.S. Climate Action Report "do not claim to make predictions about future impacts." That's his statement given before this Committee.

Dr. OLSEN. I think——

Senator MCCAIN. I noted with interest that neither you nor Mr. Russell, as part of your heavy responsibilities that you hope to assume, mentioned anything about climate change. To begin——

Dr. OLSEN. I do, actually, in my written statement, but——

Senator MCCAIN. Well, then you didn't feel it serious enough to mention in your oral statement.

To begin the process within this Administration, the President last year—"The changes observed over the last several likely mostly due to human activities, but we cannot rule out some significant part of these changes are due to a reflection of natural variability."

Dr. Marburger went on to say, "With the most powerful computers, we can forecast the weather reliably only a few days ahead, as you know. How, then, can we hope to predict climatic conditions far into the future?"

Do you believe that we can't predict climatic conditions into the future, Dr. Olsen?

Dr. OLSEN. Yes, I do believe that we can predict climatic changes in the future. We know right now—and this is the point that I want to make—that we are in a warming phase.

The last interglacial warming phase was about 125,000 years ago, and we're in one now right now. We also know, with predictions in climate, that we expect that this phase is going to last for another 2,000 years.

Climate change is a very, very serious problem. In that case, it is at the attention of the President. The President has actually charged the Department of Commerce to set up a research agenda for the next 5 years to identify the information that we need in these areas such that we can answer questions so that we can set our policy. He also charged the Department of Energy to come up with a similar short-term program, in terms of technology. I think this is very important.

We have a lot of uncertainty, and the question is, yes, we are in a warming period. We are in—I can't remember—the Holocene Interglacial warming period. But I think one of the issues is—and one I'd like to make a point—is that, you know, in terms of fossil-fuel emissions and in terms of does it cause or does it contribute to global warming, is that if we're—and I believe this—that if we were to stop all CO_2 emissions tomorrow, our global change would still continue to warm naturally, and our sea levels will continue to rise naturally until we freshen the North Atlantic enough to switch our ocean circulation patterns to the next period.

The question is I think, one, that climate change is very, very important.

And, back to your first question, I would actually like you to put it in writing, because when you read it very quickly—and I have to admit, I'm quite nervous—I don't have the exact numbers and everything in my head to be able to respond. And I will respond to that in writing. And I apologize for not responding at the first question.

Thank you.

Senator MCCAIN. I'm astonished that you couldn't understand the paragraph. I'm astonished.

Dr. OLSEN. It was read very quickly with a lot of numbers in it, and I'd like to make sure that I'm comfortable with the numbers.

Senator MCCAIN. "Long-term observations confirm that our climate is now changing at a rapid rate. Over the 20th century, the average annual U.S. temperature has risen by almost 1 degree Farenheit, (0.6 degrees Celsius), and precipitation has increased nationally by 5 to 10 percent, mostly due to increases in heavy downpours. These trends were most apparent over the past few decades. The science indicates that the warming in the 21st century will be significantly greater than in the 20th century. Scenarios examined in this assessment, which assume no major interventions to reduce"—which is apparently what you countenance—"no major interventions to reduce continued growth to world greenhouse gas emissions indicate that temperatures in the U.S. will rise by about 5-9 degrees Farenheit, (3-5 degrees Celsius), on average, in the next 100 years, which is more than the projected global increase."

Dr. OLSEN. Where I have a problem is the 3 to 5 degrees Farenheit. I mean, I don't know, in terms of that range, in terms of whether or not we have enough scientific data right now to make that prediction.

Senator MCCAIN. Well, the National Academy of Sciences can and does.

Mr. Russell, do you wish to answer the question as to whether you agree or disagree?

Mr. RUSSELL. I was just going to say, Senator, climate change—I'm not nearly as familiar with climate change as Dr. Olsen is. The science of climate change is outside of my portfolio. I'm more than happy to do research on it and get back to you in writing. I'll be pleased to do that for you.

Dr. OLSEN. And I agree, too, that I would like to look at that statement more carefully, and I will respond in writing to you, sir.

Senator MCCAIN. Well, what this is all about is one of the more astonishing statements that I've seen before this Committee. Over this past several years, we have had a series of hearings before this Committee on climate change, the best scientific evidence from all over the world, as well as the country, and there is near unanimous—not unanimous—near unanimous agreement that climate change is taking place and that human activity is responsible for a significant part of it. Exactly how much is really not clear.

And Dr. Marburger comes before this Committee and states that we don't have the ability to predict that there are questions that are significant about whether we can even predict more than a few days, the climate, and it was probably one of the more astonishing performances.

The President, by the way, as you described all the other things, did say that, yes, he read this bureaucratic product, or something along those lines—basically dismissed it.

There are Members of this Committee that have been working on this issue for a long time, including me. It's a serious issue. And, interestingly enough, the rest of the world thinks it's a very serious issue. To wit, in South Africa there will be a meeting of some 60 nations early in September trying to work our way through this issue so that we can reduce this direct threat to our environment. And since the United States produces 25 percent of the greenhouse gases, with 5 percent of the population, we think we do have some

responsibilities there. Unfortunately, there will be only a congressional representation there as real participants.

So I can see that, from Dr. Marburger's statements and yours, Dr. Olsen, that we have a very serious challenge, because there is no credibility to Dr. Marburger's statement. And my disappointment in yours, not being able to understand a single paragraph and give me a definitive answer, is also very disappointing.

This is a very, very, very serious issue.

Dr. OLSEN. And, Senator McCain——

Senator MCCAIN. And I'm very disturbed——

Dr. OLSEN.——I also consider it very——

Senator MCCAIN [continuing]. That this Administration——

Dr. OLSEN [continuing]. Serious.

Senator MCCAIN. I'd appreciate it, Dr. Olsen, if you would not interrupt me. It's one of the customs that we observe here in the Senate.

And I've very disturbed that Dr. Marburger would come forward with a statement such as he did. And again, I'm sorry—we will have further hearings, and I'm sure Dr. Marburger will have a chance to defend his position.

I thank you, Mr. Chairman.

Senator WYDEN. I thank my colleague.

I'm going to continue along this line for a moment or two, Dr. Olsen and Mr. Russell. I share Senator McCain's concerns about this science question and global warming. I think any way you look at it, we are basically alone out there with respect to 180 other nations. One-hundred-and-eighty nations are working together trying to find some solutions.

The irony for this Senator is that there are a number of them out there that are bipartisan. For example, we've found repeatedly that carbon sequestration programs, programs that are supported by the environmentalists, by the timber industry, could deal with perhaps a quarter of the global warming problem in a way that is going to win bipartisan support—Senator Craig, Senator Brownback—a whole host of Senators have been involved in this. But we're not going to be able to get on top of any real progress in programs unless we acknowledge the seriousness of the science.

So I share Senator McCain's views on this. Let me just finish up on this topic, before we go to some others, with a couple of questions.

Let me try it this way. Do the two of you, Dr. Olsen and Mr. Russell, do you support the proposition that human activities are a significant factor in the climate change problem?

Dr. OLSEN. As Kathie Olsen?

Senator WYDEN. Yes.

Dr. OLSEN. I believe that humans have contributed, in terms of fossil fuels—to the greenhouse effect. I mean, if you look in terms of our industries and the history, yes, we have contributed to the greenhouse effect.

Senator WYDEN. Mr. Russell.

Mr. RUSSELL. Chairman Wyden, let me preface my statement with saying this really is outside of my general level of expertise, so I take that with some great caution. All I can tell you is that—what I've heard Dr. Marburger say, what I've heard Dr. Olsen say,

what I've heard the President say, is that there is an element of global climate change which is directly related to human activity.

Senator WYDEN. Then I'll just wrap up this topic, Dr. Olsen, by asking you to explain the Administration's policy and why you think it's going to reduce greenhouse gas intensity. Now, as you know, the head on the Council on Environmental Quality has said that this position is going to allow U.S. emissions to rise. I think we would like to have on the record why you believe that the Administration's position is going to address climate change in a positive way.

Dr. OLSEN. I would like to get back to you with that answer in writing, sir, if that is OK.

Please let me comment in the sense that—and I'll reiterate. You know, there is a lot of uncertainty to our knowledge, OK, in terms of that—and as I pointed out, we are in a warming phase. I think the Administration is doing a lot in the research area, which is something I can comment on.

In terms of the research program that's being led by Dr. Mahoney at NOAA, he has brought together the different Federal agencies for the first time to really prioritize, in terms of what do we need answers in? What do we actually need to focus our research, focus our questions on as a Federal Government to bring answers so that, in 3 to 5 years, that we can actually use some of this research to set policy and to make policy statements?

Senator WYDEN. We'll keep the record open for your answer, but I will tell you, I think it is very unfortunate that we can't get an acknowledgment of the science here. I think that what Senator McCain read is unquestionably correct. I mean, we essentially stand out there alone, with 180 nations on the other side. In fact, it's not clear to me what, in effect, we're going to do other than to try to convince them that somehow we're right and they're wrong, because I think that they have clearly concluded otherwise.

So I'm going support both of you. I think that you're good people and people who have a distinguished career in public service. However, I'm disappointed in these answers on global climate change. Clearly, this was a topic that you had to know was going to come up.

So we'll expect, in future appearances, that you're able to address these issues in a more comprehensive way. Dr. Marburger knows of my strong views on this, as well.

We're going to go on to some other topics, but this will not be the last time we talk about this in this Committee.

Mr. Gregory, a number of questions for you. On the question of getting NASA's financial house in order and getting NASA back to its basic mission of scientific R&D, how do you view this agenda, and what are you going to be able to contribute, in terms of carrying it out?

Mr. GREGORY. Well, I think the first thing that I will contribute is that I acknowledge that research and science is the reason why we are doing this. NASA is a provider and enabler of science to be conducted. It's unfortunate that in the past we have looked at, perhaps, our obligations more in line with what we can do within a budget period within a year or so. Each of the centers and the headquarters have had their uniquely different approaches. And,

as such, when you came in and looked at it and you tried to get a common answer, it was extremely difficult.

If you look at the technical prowess of NASA, however, if you look at the successes, you will see that, from the technical point of view, we've been extremely strong, a long string of successes. It's the envy of the world. What we did not have is the financial maturity, the balance, the technical capability.

So what we are doing is basically going back to basics, fundamentals, as you mentioned. It's in a series of activities. One, we had to determine we had some misappropriations or anything that would be shady in the program. We've had GAO investigations, and I think that we can clearly say that that's not the nature of NASA.

The second thing is, PriceWaterhouseCooper (PWC) has come and attempted to audit, and you're probably aware of their inability to audit. Well, what we have done now is to sit down—this is kind of like the failure to communicate—what we have had to do now is sit down and understand what the difference is between PWC and the auditors that we had before, and then determine how we can approach the audit, how we characterize things, facilities, the Space Shuttle, and things of that nature, versus the solid rocket boosters, the engines, and things of that nature. And then I would assume that, very quickly, we will both be on the same page, and we will be able to audit.

The third is certainly the financial management activity that we are working within the agency right now. We are looking at, one, beginning an effort to standardize the agency that we all, again, are working from the same page. At that point, we will begin to get our financial house in order. That's an activity that's just a small part, we're working in our independent assessment of the life-cycle cost of the Space Station. But in a much, much larger sense, following the President's management agenda in our IFM activities that are ongoing at this moment. I will predict that perhaps by the end of this summer, we should be able to answer each and every one of your questions.

Senator WYDEN. What would you say are Mr. O'Keefe's big accomplishments so far?

Mr. GREGORY. So far? I think he has turned the spirit and the morale of the agency 180 degrees.

Senator WYDEN. Any others?

Mr. GREGORY. Oh, lots of them. I mean, that was the most important one. He has provided a vision and a mission that is to the point. It is understood. We have now focused all of our activities toward the accomplishment of the missions. We are beginning to gather as one NASA. I can tell you that we had five different NASAs that were working, even though we attempted to eliminate those stovepipes. But, in fact, we have more communication in the halls now—not fake stuff, but real stuff—that begins to say, OK, the purpose of this is to do what? We answered the "so-what" questions. And we now have, I think, a much more united NASA or a single NASA.

Senator WYDEN. Let me turn to the Space Station. The General Accounting Office issued a report yesterday on the Space Station with respect to significant challenges that they believe continue.

How soon should we expect to have NASA's final plan on the Space Station?

Mr. GREGORY. As far as the——

Senator WYDEN. Is it going to continue to be a work in progress, or when are we going to get a final plan?

Mr. GREGORY. Of course not. In my budget deliberation this spring and into the early summer, I have gone back and challenged every past decision. And so the budget preparation is part of it. We have an internal independent assessment that is going on right now and is based on the military program using cards. And we have an external independent group looking at the financial capabilities of the agency. All of those reports are supposed to be complete by the end of August. And my projection would be in the late summer, early fall, we should be able to answer the questions.

Senator WYDEN. Now, the ReMAP effort, the Research Maximization and Prioritization task force—that is a mouthful—put out a new report making various recommendations. But, to me, the real question is how soon is it going to be possible to move the Space Station beyond being a great engineering feat into a research program? When do you see that coming?

Mr. GREGORY. Well, I think I'd have to answer that in degree, because I was curious about the same question that you've just asked and I researched and tried to determine how much science has been completed so far on this facility or this building that is in work. And as of the 30th of June, about 84,000 hours of science have been conducted on the Space Station. Most of that was autonomous.

There is required, every now and then, some human activity. What I have tasked the Station program and the Shuttle program to do is to complete the U.S. core complete by the February/March 2004 timeframe. We've worked with the international partners on this particular area. Soon after that, we will complete the international partner construction. If you were to ask me that question, I would say that we would be up and running at about the time that, on the new schedule, we said we would and which would be in the 2006 timeframe.

Senator WYDEN. When Administrator O'Keefe was here last, we had a big group of high school students in the back, and I asked him a question essentially about students in space. And if a student met every single one of the requirements—every one of them—for mission specialists that are required today, what would be wrong with that? After Administrator O'Keefe gasped, and you could see it, you know, in his face, he said that he'd look into it.

How do you feel about having a research program that would really determine how we could get young people more inspired and more involved in space, including looking at the question of if they met all of the requirements of a mission specialist, including being allowed to go? If those young people are going to fight in battlefields all around the world, it seems to me, if they're qualified, they shouldn't be cut off from these opportunities either. How do you feel about looking into that and researching it?

Mr. GREGORY. Senator, you've caught me off guard on this particular subject. I have to answer as Fred Gregory on this subject. I understand exactly what you're saying. I have some grandkids be-

hind me who I know, at this moment, would skip school so that they could prepare to go fly in space. It's a bit more complex than that. As I look back——

Senator WYDEN. Nobody is talking about grandchildren, Mr. Gregory. We're talking about people who can go fight in Afghanistan and who can go out and defend this country, whether, if they're qualified, they could be a mission specialist. I'm not talking about grandchildren.

Mr. GREGORY. I agree that you're not talking about my 12- and 14-year-olds, you're talking 18 and older. And, again, I would have to fall back on the kinds of preparation that would be necessary.

First would be the unselfish part of it. An 18-year-old would have perhaps just finished high school. And if that 18-year-old were so smart that she could—and he could—fly in space, then I look at the potential loss to the world of using those potentials if you allow that person to continue in universities and postgraduate schools, et cetera.

So I think, at 18, first of all, I would not think that they would be qualified to fly because of the requirements. They would have to learn the engineering, the science and the math necessary to do it. I think we could fly them, certainly. But they would fly more as a guest, and not necessarily as a contributor.

But since you've caught me with this one, we have just begun the Mission Specialist Educator program, and we're working in conjunction with the education technical societies, the education societies, and the Department of Education. And one of the suggestions was, if we will have a Mission Specialist Educator program, to follow in the lines of Barbara Morgan, perhaps we should have students who participate in the selection of those teachers.

I was amazed at the push-back that I got from some of these educational groups. They say things such as, "Certainly you can do that, but you'll be responsible for their decisions." Well, I can't think of anything more that I would rather be, is responsible for those decisions. They said, "Well, they would choose exciting teachers." And I was thinking, well, what better teacher would you want to take to space than someone who is exciting?

And so we are looking at it, not so much from the participation yet in orbit, but certainly in the participation in the preparation for people to go on orbit. But we have had 26-year-olds who have flown in space.

Senator WYDEN. I would only hope that the agency would say that if you're qualified, if you meet all of the bottom-line requirements, your government isn't going to hold you back. The government is going to be looking for ways in which you tap your potential, particularly when you can have scientists and young people, like we saw in this room when Mr. O'Keefe was talking about it. I just even started the question, and these young people who were studying science broke into applause.

We ought to give them a reason to dream, not to have sort of silly ideas that children at little-league age can go to space or something like that, but that if you can go fight for your country and you can meet the qualifications required of a mission specialist, age alone shouldn't rule you out.

I want the agency to research this. I don't want the agency to start anything tomorrow or the next day or the next day, but I want the agency to research it. I think that's part of what we hope will happen on the O'Keefe watch.

Let me turn——

Mr. GREGORY. Senator, can I respond?

Senator WYDEN. Of course.

Mr. GREGORY. Let me change my response to exactly——

Senator WYDEN. I hope you will.

[Laughter.]

Mr. GREGORY.I have changed my response to exactly what you said.

Senator WYDEN. Good.

[Laughter.]

Senator WYDEN. That is never a bad judgment for a nominee.

[Laughter.]

Senator WYDEN. I mean, really, I think all I wanted to convey is let's do the research, and let's tap all of our opportunities. We are anxious to work with you on that.

Let's turn now to Dr. Olsen and Mr. Russell. There has been concern about the Administration's intention to nominate two rather than four Associate Directors of OSTP. The concern is that the Administration wouldn't have the Associate Director positions for national security and for the environment that were present before. I think everybody would agree that these are vitally important. What's the signal being sent here by this, and what's being done to try and address this?

Mr. RUSSELL. Mr. Chairman, I'd like to answer that question for you. When Dr. Marburger took over as the Director of the Office of Science and Technology Policy, one of the things he wanted to do was reduce stovepipes within the organization. Virtually every director, when they've taken over, especially a change of Administrations, has reorganized the office, but generally we've ended up with four associate directors.

The idea of having two and defining them, one as technology and one as science, is to, A, reduce stovepipes, and, B, allow for synergy within the office. The less top heavy an organization is, especially an organization as small as OSTP, which is about 50 people, the greater the chance that you're going to have the kind of interactions and synergies, because there will be less opportunity to view individual issues narrowly within the band, be they the environment or national security or technology.

Obviously, virtually all the issues we deal with have some crossover. And so the idea was to try to create an organization that could be more responsive, less top heavy, and without stovepipes. And I have to say, having been Chief of Staff there, and then a consultant there—I've been at OSTP now for almost a year-and-a-half—it has worked extremely well under Dr. Marburger's leadership. And so I think it was a very wise decision.

Senator WYDEN. Well, I'm all for synergies. Put me down as pro-synergy. However, I want to make sure that those functions do not get downplayed. They're important ones, as you know, given energy bill's efforts to try to deal with it, and we're anxious to work with

you on it, but we've got to get those issues to visibility and the attention that's important.

For you, Mr. Russell and Dr. Olsen, let's talk about the coordination between your offices and the new Department of Homeland Security. I want to preface this by saying that Dr. Marburger and all of those associated with your organization have been very helpful, very constructive to us in working on our efforts to mobilize science and technology experts in the homeland security effort.

Tell us, if you would, how you see OSTP and the new Homeland Security Department interacting and coordinating, particularly research and development across the agencies.

Mr. RUSSELL. Terrific. Well, let me preface the comment with an explanation of how we're set up right now. And I tried to explain it in my written testimony, but, to be honest, I didn't want to bore everyone with the lengthy detail of our bureaucratic processes.

We have seven departments under the two associate directors. One of those seven departments is one of homeland security and national security. That is staffed by an individual who answers directly to Dr. Marburger through our chief of staff. That person works both for OSTP and the Office of Homeland Security. So the person works for both Governor Ridge and Dr. Marburger. This has really allowed OSTP to fill the central role of advising on R&D issues associated with homeland security.

And it is our expectation that when the department is stood up again, OSTP will have a central role in helping to coordinate R&D for homeland security.

Senator WYDEN. Dr. Russell.

Dr. OLSEN. I'm Dr. Olsen.

Senator WYDEN. Excuse me. My apologies. Mr. Russell, thank you.

Dr. Olsen.

Dr. OLSEN. No, I can't add anything to what he said, except that everybody in the office is really committed to this issue and working as a team, the office responds depending upon what are the questions. For example, if it's vaccines or biological, it's from science. If it's more cyber-security and that, it's from technology, and they are all energized.

Senator WYDEN. Mr. Russell, how would you put the current troubles of the technology sector in perspective? As you know, it wasn't very many years ago when few would say we'd see the kind of problems in the tech sector we're seeing now. What do the current struggles say to you about the role of technology and the economy and the potential of technology to spur productivity?

Mr. RUSSELL. I tried to touch on this in my testimony. I think the two are severable issues. Obviously, the NASDAQ and technology companies, the valuation of technology companies, has been hit very hard since the peak of that back in March of 2000.

That being said, I think, from a productivity standpoint and an economic standpoint, there's no question that technology is leading to increased productivity for our Nation, that it is a critical component of our economy. And that has not changed.

That fundamental belief in technology as a driver of our economy has not changed, at least not in my mind. And I think that we have

to separate what the NASDAQ is doing from the actual productivity gains we're seeing in the country and in the economy.

Senator WYDEN. Does the crisis in the tech sector require any major changes in the way government thinks about technology policy, in your view, Mr. Russell?

Mr. RUSSELL. I think that we have to realize that technology implementation isn't instanteneous. And I think that the Administration is going down that path. I think we have to harness technology in a manner that really does produce results. I think that's what the E-government initiative, for example, is all about in the Federal Government. I think we're going to see the same thing with homeland security.

Technology, by itself, is not a panacea, but it is an extremely important tool, which we can use to increase efficiencies and to accomplish goals that we really couldn't do without technology. So I think it's a slightly more patient approach.

Senator WYDEN. Dr. Olsen, as you could tell, and I welcomed your statement, I want to see a much more aggressive effort to get women in the hard sciences. You've got a track record in this area and you've served as a Federal representative for the Commission on the Advancement of Women and Minorities that was established by the Congress in 1998, and you made recommendations, as I understand it, to help achieve the objectives.

What were some of the things you fought for, the areas that you really pursued as a commission member? And what's your sense about their impact?

Dr. OLSEN. Well, I guess dating back to my experiences in high school, I think it would have been a shame that if there were only two women in the science class, that we would lose them. And one of my concerns is in terms of the quality of the teachers that spend a lot of time with the students and really make the first sort of impression. I think that this is very important. As you're probably aware, many of the teachers that are teaching science have not majored or even minored in a science area, and I think that this is very important, because they're sort of the first link.

Another one is in terms of image. It's an interesting thing. I'll give you an example. I went to a third-grade school in Pittsburgh, and I went in when I was the chief scientist of NASA. It was an all-girls school. They were asked beforehand to draw a picture of a scientist. And all the little girls drew pictures of a girl except for three, and those were the three that had just transferred into the school. They had an image that a scientist has to be a man.

Even in the last 8 months, since I've been nominated for this position, so many people have come up to me and said, "You don't look like a scientist." I do think that we do have sort of an image problem for all scientists out there. And it's something that the Commission is going to take on.

The other thing is, you know, we have made some strides. The National Science Foundation 2002 indicators have shown that in all the disciplines, the participation of women have increased over the last 10 years. We need to look and see which of the programs have actually worked and make sure that we maintain those programs as well as try new activities.

It's interesting, because in biology, women are about 40 percent. In social sciences, we're 40 to 50 percent. In engineering, while it has increased, it's still less than 20 percent. And in physics, it's just made it over 20 percent. That is just not—it just can't be acceptable. Under-represented minorities are even a worse case than women.

Senator WYDEN. Are there other new initiatives or new programs that you'd like to pursue in your new position to go after these big disparities?

Dr. OLSEN. Yes, I would. One of the things that—if I'm confirmed—we have the National Science and Technology Council, which brings together the Federal agencies to address some of these issues. The Department of Education and the National Science Foundation are now actually starting to talk and starting to get some programs targeted toward teachers.

The other thing that's actually very interesting is, in schools, 30 percent of people that enter college enter as a major in science and engineering. But less than half of those actually graduate in science and engineering. So we also have to look at our colleges and universities to see where we can go with that.

I actually am a strong believer in mentoring programs. I think that they have worked, but it's not just mentoring at one little stage and then stopping. You really have to look at this through the entire span of an individual's science career.

Senator WYDEN. Mr. Gregory, the NASA program is going to put a new focus on education, and I think it's very welcome. How would you like to go about encouraging more women to get into science and engineering?

Mr. GREGORY. If I could limit it not just to women, but we could talk about minorities in the whole scheme. It has been a dilemma for me. I was born in Washington, grew up in Washington, came through the public schools in Washington. And observations of the capability of students in Washington now, with some exceptions, are below my expectation. I have struggled with how we recover perhaps what we have let slip.

I've spent a lot of time working in the third grade and the fourth grade. In my experience in the last 15 or so years, I've found that up until about the third grade, students, regardless of race, regardless of ethnic background or sex, seem to be the same. After the third grade, there seems to be a divergence for some reason.

NASA is certainly looking for scientists and engineers. We would certainly like to have a pool of a completely diverse group to pick and choose from. We don't have it. We're frustrated, and it shows up in our statistics.

If I were running that particular section, I would concentrate on the elementary school, the third and fourth grades, establish relationships, mentoring, establish standards, four standards, and see how that works.

Senator WYDEN. I think those are useful steps. I also hope that you all will really set out some goals so that we have a chance to measure which programs are not working and which programs are making a difference. We've talked to the Administrator about it, and we'll hope to have your support for that, as well.

Mr. GREGORY. And you certainly will. I think your goals are the standards that I'm talking about—are certainly performance-based, and we would have to choose the ones that work and either modify or dismiss the ones that don't.

Senator WYDEN. Very good. Just a couple of other areas, and we can wrap up.

Mr. Russell, I know you've talked about nanotechnology and that that will be a priority for the Administration, and that it's an interest of yours. And it is one in which I share your view. I think it's an important one. What do you see as a role for the Federal Government in this?

I suspect that a lot of people in the field would—if you asked them what the Federal Government's role in nanotechnology would be, they'd say, "Please stay as far away as you possibly can and let us do our thing." Clearly, we don't want anything that will stifle innovation in the private sector, but I'm curious what you think the government's role ought to be.

Mr. RUSSELL. Oh, no, absolutely. That being said, though, I think there's an awful lot of basic research that still needs to be done, in terms of nanotechnology.

Nanotechnology, which you're well aware of, is really reducing things to their smallest component pieces, down to the atomic level, sometimes the molecular level. And our understanding of how to do that, how to measure that, how to set standards for that, and in many cases, how to manufacture within that range of really tiny particles, is something that we may not currently have, and may not for quite some time, have a practical commercial application.

So I do think the Federal Government has an important role in funding basic research related to nanotechnology development. And I think that's exactly what the National Nanotechnology Initiative is designed to do.

Senator WYDEN. One last one for you, Dr. Olsen. On the government labs, I think we know that a lot of the laboratories in the facilities which support government scientific enterprises were built decades ago, 40, 50 years ago, and are in tremendous disrepair. What would you see as your role, as your office's role, in helping to put in place a plan to get the upgrades and necessary improvements done?

Dr. OLSEN. I think that we have to bite the bullet and actually recognize that we do have a problem with the laboratories. And when we are developing the budget for the Federal agencies, that we need to consider that aspect. It's also, as I say, an issue at the universities and colleges, especially in terms of some of the States.

When I chaired the panel on facilities, you'd be amazed at some of the pictures. I still remember at one university, they were standing on buckets in a chemistry lab doing experiments because of the leaks in the roof.

And I think that, if I am confirmed, I would like to work on ways, creative ways, with the universities and with the Federal labs on how we can go about really trying to make at least a small impact into this major problem.

Senator WYDEN. I don't have any further questions, but let me leave you with this. I want to get all three of you confirmed as soon

as possible. I think you're good people. I think you're dedicated professionals and sincere in your views.

I think you, Dr. Olsen, and you, Mr. Russell, understand that Senator McCain has some concerns on the climate change question. I share those, and I think I've made that clear. I want us to understand that the science here is no longer in question; it is indisputable. I want to see the remedies to the problems—one along the lines that I mentioned—that will be supported on a bipartisan basis in the U.S. Senate that will bring together people across the political and economic spectrum, as we've been able to do in carbon sequestration.

I think that once we can get on top of an acknowledgment with respect to the science and what humans contribute and the other underpinnings of the science question, then we can begin to go to the next level, which is to talk about programs that are constructed and well thought out and practical.

But Senator McCain has indicated that he can't support the two of you, Dr. Olsen, and you, Mr. Russell, at this time, so I hope you can get back to Senator McCain, address his concerns. I want to see all three of you confirmed as soon as we possibly can, and I think that is Chairman Hollings' desire as well.

It's my custom to give any of the three of you the last word, and we will adhere to it. Is there anything that any of you would like to add further? You're not required to.

Mr. RUSSELL. I was just going to say thanks again for the opportunity for this hearing. I've been waiting for it for some time, and I'm really pleased, and I appreciate the time and effort that you've put in on these issues.

Senator WYDEN. All right.

Dr. OLSEN. And, Senator Wyden, I also want to thank you. What you said in the closing, I share with you. I wanted to say at closing that, as you know, I was NASA's chief scientist. I'm a biologist. And when they actually called me, I started laughing, to tell you the truth, because I'd never had an astronomy course. Well, when I went to NASA, I learned astronomy, and I learned about the next generation telescope and Terrestrial Pathfinder.

And if I am confirmed, and even that, I plan to become an expert on the climate change. I've already read the reports. I've actually had my brother, who chairs the Department of Environmental Coastal and Ocean Sciences and U-MASS-Boston, provide me lectures in terms of this area. I have to admit, I am not an expert, but I also know where the expertise lies within the Federal Government, within the scientific community. And I pledge that I will become very, very knowledgeable on this topic.

Senator WYDEN. Well, I appreciate that, as well. And, look, there are going to be disagreements. This is not a huge surprise that there are disagreements between some of us on the this side of the dais and in the Administration on the climate change question. That's not astonishing to anybody.

But I do think that on some of the fundamental science questions, we've got to acknowledge common ground. Once we do that, then we go to the next level, and people like me are anxious to meet the Administration halfway as we have done so consistently in a variety of areas.

There is certainly nothing inherently partisan about science policy. Quite the opposite. It ought to be driven by the dreams and hopes of scientists and at lab benches and other facilities. So let's see what we can do to move forward.

Mr. Gregory, you somehow got spared, for the most part this afternoon. Since you came around on doing the research in the student space program, I ought to let you quit while you're ahead.

[Laughter.]

Senator WYDEN. Anything you'd like to add further?

Mr. GREGORY. I'd like to say that I'm just humbled to be able to sit across the table from you. And, if confirmed, I will do everything that I have promised to do and will work with the Congress and the White House to make this the best era that's possible.

Senator WYDEN. We appreciate your dedication, and Dr. Olsen and Mr. Russell. Thank you. Thank you for your patience.

The hearing is adjourned.

[Whereupon, at 4 p.m., the hearing was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF HON. CONRAD BURNS,
U.S. SENATOR FROM MONTANA

Thank you Mr. Chairman, I would like to thank you for holding this very important and very delayed hearing. Before us we have three nominees recommend by the President. They represent a wealth of knowledge and experience in their respective fields and I am supportive of all three.

I have a particular interest in my good friend Kathie Olsen. As a fellow from the National Science Foundation, Kathy advised me on science and space issues. She was such a great resources in my office and to the people of Montana that I asked her to stay on for an additional year. Fellowships are an important tool for us in Congress and Dr. Olsen was a great example of how those fellowships benefit not only our constituents but the Federal Government as well.

Dr. Olsen has a PHD in biology and served as a postdoctoral fellow at the Harvard Medical School. She has worked as an Assistant Professor instructing students on science related matters. Not only does she have a strong academic background, but she is also a competitively funded researcher and scientist. While in her 20s, Dr. Olsen successfully applied for NIH funding to use genetic models to understand the brain, a method that was then in its infancy and is now part of mainstream science.

Dr. Olsen is widely published in journals and books in the neuroscience literature.

She brings with her experience from the NSF and as Chief Scientist at NASA. She has organized and managed major Federal funding competitions, including the last Science and Technology Center review for NSF. Dr. Olsen has served on scientific peer review panels and participated in site visits for DOD, NIH and NSF programs.

As NASA's Chief Scientist, Dr. Olsen developed a plan that led to the establishment of the Office of Biological and Physical Research, with a mission to use the synergy between physical, chemical and biological research in space to acquire fundamental knowledge and generate applications for space travel and Earth applications.

Dr. Olsen has been a major participant in several speaking and mentoring roles to encourage women, minorities and children to consider a career in science. In fact, Dr. Olsen has been a participant in several Women's Conferences in Montana. Dr. Olsen has received numerous awards from government, industry, major international professional societies, and colleges and universities including an honorary degree based on her role as a mentor to young scientists.

Finally, Dr. Olsen is aware of the importance of the need to geographically broaden the recipient pool of Federal R&D dollars. Montana's Higher Education system is brimming with talent. The quality of research conducted at Montana State University and the University of Montana is equivalent to the research conducted at more well-known universities like Stanford, MIT and Harvard.

However, our researchers are at a significant disadvantage. The main factor that separates us from these prestigious universities is the level of funding. About half of the States in the U.S. receive less that 10 percent of all Federal R&D funding.

The EPSCoR programs provides for a foundation to build on research capacity in rural States and allows universities in rural States to develop expertise in high technology areas like nano-technology and opto-electronic technologies.

At Montana State University, Jack Horner, a world-renowned paleontologist (dinosaur guy) has received an EPSCoR award to study prehistoric Earth and the inhabitants at that time.

Space researchers and students at MSU have used EPSCoR funding to build a small satellite (CUBESAT) that will be launched either this year or next. This CUBESAT will orbit the earth and measure the radiation levels in space replicating the experiment of America's first satellite, Explorer One. This is an example of how students at a rural university can benefit and contribute to our Nation's exploration of space.

EPSCoR funding provided funding for a project at the University of Montana to understand and lessen the burden of neurological diseases. Dr. Olsen certainly has a keen interested in that subject.

The bottom line: Dr. Olsen is a well-rounded scientist with a superb resume. As an advisor to her peers, Members of Commerce and the current and past Administrations, I encourage my colleagues to support her nomination and the nominations of Mr. Russell and Mr. Gregory.

Thank you, Mr. Chairman.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. ERNEST F. HOLLINGS TO FREDERICK D. GREGORY

Question 1. This Committee has been concerned that not a high enough priority is placed on the maintenance of infrastructure at NASA Centers. At a hearing before this Committee in September, witnesses testified that improper infrastructure maintenance was adversely affecting safety and performance of the Space Shuttle. Will infrastructure maintenance be a major focus of NASA under your tenure?

Answer: Although I cannot address overall agency infrastructure issues at this time, while serving as the Associate Administrator of Space Flight, I have been involved in addressing the Space Shuttle program's infrastructure issues. NASA's fiscal year 2003 budget request includes approximately $2 billion over the next 5 years to support Shuttle safety upgrades, supportability upgrades, infrastructure revitalization, and reserves. Shuttle infrastructure revitalization projects will replace, repair and/or rehabilitate systems and capabilities that have become obsolete, degraded to a point where repair is not possible (i.e. replacement is necessary), spare parts are no longer available, or systems are in poor condition and must be upgraded and/or replaced. Priority considerations include: support of program goals and objectives, impact on flight hardware processing, manufacturing & testing, breakdown history, obsolescence, life cycle cost, payback, climate, weather and environmental situation.

The Shuttle Program has worked diligently to identify the infrastructure projects necessary for the program to continue operating safely into the foreseeable future. This effort will continue to be a major focus of the Shuttle program as it seeks to make the best use of available funds.

Question 2. One of the issues highlighted in the Young Report was that the final International Space Station cost estimate at completion has not been a management criterion within NASA. The Station cap that Congress established was on the overall development costs for the Station along with the use of the Space Shuttle. Can you elaborate on this finding and comment on how you would propose to deal with the issue?

Answer: NASA acknowledges that the life cycle cost of the ISS was not a management criterion prior to the recommendations of the Young Report. As the Young Report pointed out, the focus had been more on the budgetary process and its associated annual cycle, than the Program's life cycle. The Report recommended that NASA develop a life cycle technical baseline and manage the ISS program to total cost and schedule as well as fiscal year budgets. NASA has accepted this recommendation and has taken several distinct actions in order to establish the life cycle cost at completion as management criteria.

A Cost Analysis Requirement Description, or technical baseline, has been created which defines all the Program requirements and takes into account operational, maintenance and logistical requirements through end of the ISS life.

Also, two independent cost estimating teams were formed in early 2002, (one internal and one external to the Agency), to evaluate the life cycle costs of the Program. Their evaluations will be a key input in NASA's fiscal year 2004 budget process.

The scope of the technical baseline is managed and costed via a Work Breakdown Structure (WBS). The WBS will be populated using integrated life cycle cost information creating a new Performance Measurement Baseline against which the future execution of the Program will be judged.

Question 3. In your answers to the pre-hearing witness questionnaire, you stated, "if an agency continually fails to achieve its performance goals, I would expect that agency's management to be held accountable for developing a corrective action plan and implementing it." Considering NASA's difficulties in managing its finances and concerns that have been raised about the amount of science research that can be performed on the International Space Station, what actions do you think Congress should take to make NASA's management more accountable?

Answer: From my perspective, Congress can play an invaluable role by ensuring effective oversight of NASA and working with NASA and the Administration to remove unnecessary barriers to achieving the NASA Vision and Mission. I look forward to opportunities to work with the Congress in implementing NASA's Strategic Human Capital Plan, including approval of necessary flexibilities, to ensure the agency retains the competitive, diverse work force it needs.

Congress can also help hold NASA accountable by requiring continual efforts at improving the integrity and reliability of agency financial information and supporting the implementation of necessary reforms. As one example, the agency is grateful to the Congress for its support for the recent movement of $11 million dollars in the current operating plan in order to kick-start consolidation and upgrades of NASA computer systems that are required for NASA's Integrated Financial Management System.

The Congress can hold NASA accountable through support of independent, external reviews such as the Research Maximization and Prioritization (REMAP) Task Force and the ISS Management and Cost Evaluation Task Force (IMCE). Such reviews can provide flexible and responsive means for rapidly bringing world-class experts in to assist NASA on major challenges.

Congressional support for integrated agency-wide planning efforts can also be a means of holding NASA accountable by creating a better common understanding of the challenges and opportunities facing the agency. NASA is currently revising its Integrated Space Transportation Plan (ISTP), which coordinates investments in the Space Shuttle and investments to replace the Shuttle with lower cost, safer, privately operated space transportation capabilities through NASA's Space Launch Initiative (SLI). The results of such internal NASA assessments are critical to develop realistic and integrated plans for developing new technologies and capabilities.

Question 4. The National Academies of Science's Space Studies Board recently released a report that recommended priorities for exploration of the solar system from 2003 to 2013. These priorities included missions to Pluto and the Kuiper Belt; Europa; Venus; and Jupiter. How will NASA use this report, which was prepared at NASA's request?

Answer: NASA received the National Academy of Science's Space Studies Board recommendations for Solar System exploration in July. We are currently in the process of assessing this comprehensive study for mission feasibility and conformity with established cost caps. It is NASA's intention to use the mission sets identified to shape future Announcements of Opportunity for Solar System exploration. NASA will continue to use the external peer-review process to evaluate proposals received and make final selections based on scientific merit and mission feasibility.

Question 5. The recently released *Research and Maximization and Prioritization (REMAP) Task Force* report found that "if enhancements to ISS beyond 'U.S. Core Complete' are not anticipated, NASA should cease to characterize the ISS as a science-driven program." After being told for years that the purpose of the Space Station was "world-class" research, I find this statement remarkable. What steps does NASA need to take to ensure that there will be sufficient capability to conduct research on the Space Station?

Answer: In posture hearing testimony earlier this year, NASA laid out the steps needed to define necessary capabilities as well as to address the cost challenges of the ISS. Last November, the ISS Management and Cost Evaluation (IMCE) Task Force, provided the basic roadmap, which NASA has endorsed, to improve ISS management. We are well along in effecting proper controls, regaining credibility and, first and foremost, understanding the research requirements that will determine the capabilities needed.

NASA has initiated a five-point assessment of the ISS program, in order to reform and revitalize the program and ensure the construction of a viable ISS that fulfills its potential as a world-class research facility. These five areas of the assessment are: science priorities, engineering development and deployment, cost estimating and analysis, mission and science operations, and international partner coordination.

The ReMaP task force activity is a key element of the science priority area of the ISS assessment. The task force focused on science priorities for NASA's Office of Biological and Physical Research. The NASA Chief Scientist has led an assessment of ISS research activities for all of the NASA enterprises. In addition, research requirements for the ISS International Partners are being assessed through the ISS Utilization Operations Panel. Together, these research requirements will be used to identify ISS capability needs and options for achieving these capabilities.

Question 6. Another issue of interest to the Committee is how to promote commercialization of space. Based on your years of experience in the space program, what

recommendations do you have for providing incentives for greater private sector involvement in space?

Answer: To fulfill the Space Act mandates and to effectively implement its Vision and Mission, NASA needs commercial partners to: Translate NASA-funded technology into commercial products that contribute to economic growth; Join in developing new technologies and products that support NASA missions; and Explore market-driven research opportunities that exploit the unique environment of space.

Commercial activities at NASA must support the President's Management Agenda, which calls for: Increased dependence on private sector for functions not inherently governmental; Limiting the size of government and making it more effective; and Competitive sourcing to meet governmental needs for goods and services.

Engagement of private sector commercial and non-profit interests can occur in several ways: Technology Transfer: Providing the NASA-developed technology to the private sector for inclusion in commercially developed goods and services; Joint Ventures and Partnerships: Collaborating with the private sector to develop new programs or enhance existing programs using shared resources for the mutual benefit of both NASA and the private sector participant; and Research Opportunities and Technical Assistance: Providing private sector access to unique NASA assets, resources, practices and expertise to conduct commercial R&D, manufacturing, and non-traditional applications.

Opportunities for private sector involvement exist in all NASA Enterprises and program areas.

Question 7. A July 8th article in *Space News International* reported that NASA was considering not fielding a new two-stage reusable launcher by 2012, which was the goal of the Space Launch Initiative. What should be NASA's strategy for Space Shuttle replacement and next-generation space transportation?

Answer: The purpose of the Space Launch Initiative (SLI) program is to identify and close the technology gaps necessary to enable the development of a safer, less costly, commercially viable 2nd Generation Reusable Launch Vehicle (RLV) capable of fulfilling NASA's needs. Although the overall strategy focuses on being able to deliver a new two-stage reusable launcher by 2012, a decision on whether to proceed with full-scale development of the SLI is not scheduled until fiscal year 2006.

NASA is re-evaluating the Agency's advanced space transportation strategy as part of this year's update to the Integrated Space Transportation Plan (ISTP). This study will provide the guidance for future Agency space transportation development.

Question 8. On November 23, 2001, the Chinese government announced that it will start manned space flights missions in 2005, with the objective of reaching the Moon. Do you think that the United States should consider another mission to the Moon, and the establishment of a lunar base for scientific research?

Answer: The space science community has not expressed an interest in a lunar base for scientific research, and there is currently no plan to pursue such an endeavor. It should be noted, however, that the Space Studies board has endorsed a lunar mission called the South Pole-Aiken Basin Sample Return Mission. This mission would robotically return samples from the solar system's deepest crater, which pierces the lunar mantle. This endeavor is not suited for a human exploration mission because it can be most efficiently and safely performed robotically.

RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HON. JOHN MCCAIN TO RICHARD M. RUSSELL

Question 1. Over the years the U.S. economy has become reliant upon a steady flow of technology for continuous economic growth. The U.S. is investing over $40 billion per year in civilian scientific research. Do you have any ideas of how the technology transfer process may be improved to increase the flow of technologies from federally sponsored research laboratories to the marketplace?

Answer: The 1980 Bayh-Dole and Stevenson-Wydler Acts continue to provide the basic statutory framework encouraging the transfer of technology from federally funded research from universities and Federal labs. Recent statistics from the Association of University Technology Managers (AUTM) show that the technology transfer related to federally funded university research, through Bayh-Dole mechanisms, is working well. The Technology Transfer Commercialization Act of 2000 aims to improve the transfer from the Federal labs. The Department of Commerce chairs an interagency group that is revising the licensing regulation to implement the new statutory authorities.

Another important factor in successful technology transfer is a strong scientific and engineering workforce in the United States. Without an adequately skilled

workforce, the ability of private sector companies to capture and commercialize innovation from federally funded research will be compromised.

If confirmed, I will work to help address both the underlying science and technology workforce issues as well as the proper implementation of the Technology Transfer Commercialization Act. In addition, I will work with the President's Council of Advisors on Science and Technology (PCAST), which is engaged in a review of our Nation's technology transfer processes. PCAST intends to release a report in fall 2002 with its findings on technology transfer mechanisms that encourage commercial development and ensure maximum benefit for Federal research funding.

Question 2. What are your thoughts on the Advanced Technology Program and whether or not it is the type of research program that satisfies the needs of the Nation's research agenda?

Answer: The Secretary of Commerce has proposed a number of important reforms to the Advanced Technology Program (ATP). For example, the reforms involving universities (allowing universities to lead ATP joint ventures and to negotiate intellectual property-rights with industry joint venture partners) serve a dual purpose. These proposals recognize the value of university-based research and the role that it plays in developing high-impact technologies. Additionally, the reforms would make it easier for universities to accrue financial benefits in return for the research contribution they make to joint ventures. The recommendation to limit participation of large companies only to joint ventures (not as single-company applicants) provides greater support for small and medium sized businesses (SMBs) by ensuring that participation by large companies is not at the exclusion of SMBs. The proposed reforms aim to strengthen and to improve ATP. I support these reforms and believe that following their enactment, ATP will be a more important component of the Nation's research agenda.

In considering funding for ATP, I also think it is important to recognize that the National Institute of Standards and Technology (NIST) faces its own prioritization issues. The NIST laboratories, which have received national and international recognition ranging from government awards to Nobel Prizes, are central to satisfying NIST's core mission. I believe ATP funding must be weighed against the possible use of that same funding to improve NIST's core laboratory functions.

Question 3. A recent National Academy of Sciences Panel recommended the establishment of a Homeland Security Institute to provide analysis, simulation, and modeling to assess vulnerabilities and assess the effectiveness, of steps taken to reduce them. This institute would report to a newly created Undersecretary for Science and Technology within the new Department of Homeland Security. Do you have any thoughts on this proposal?

Answer: The President's recently released National Strategy for Homeland Security discusses the need for independent and private analysis for science and technology research. The Department of Homeland Security (DHS), under the President's proposal, will fund independent analytic support for our homeland security science and technology endeavors. The Department will assess potential roles for these functions, given the capabilities currently provided by the National Infrastructure Simulation and Analysis Center and other DHS components associated with information analysis and critical infrastructure. These efforts will support planning activities, including net assessment, preparing agency guidance, and reviewing agency programs and budgets; systems analyses; requirements analyses; assessments of competing technical and operational approaches; and the Department's use of "red team" techniques. The organizations that provide this support to the Department will be allowed to undertake long-range projects and should have access to sensitive government and proprietary data, including intelligence assessments. They should be objective, staying free from conflicts of interest with other government institutions and the private sector.

I fully support the need for this capability. I am pleased that the current legislation, both in the House and Senate, contains language creating this capacity consonant with the President's goals.

Question 4. The issue of cyber security is of great interest to this Committee. A number of different departments and agencies, including NSF, the Department of Commerce, NSA, and DOD are all engaged in research activities. What action is OSTP taking to coordinate the activities of these departments and agencies, and ensure that they are not engaging in duplicative research?

Answer: Through regular senior level interagency meetings, OSTP has exercised its coordination authority for critical infrastructure protection (CIP) research and development (R&D) over the past 5 years with those organizations that have R&D functions.

Beginning in March 1998, the National Science and Technology Council formed a Critical Infrastructure Protection Research and Development Interagency Working

Group (CIP R&D IWG) under the joint oversight of the Committee on National Security and the Committee on Technology. The CIP R&D IWG, led by OSTP, was established to develop and to sustain a coherent roadmap on technologies that, if implemented within critical national infrastructure sectors, would reduce vulnerabilities and would counter threats that could cause major damage to the security, economic vitality, and social well-being of the United States. As a result of Presidential Decision Directive 63, the IWG's charter was expanded to develop a process of ongoing R&D planning; and appraisal, as well as to provide appropriate R&D support to the Critical Infrastructure Coordinating Group and to the national coordinator.

On October 16, 2001, Executive Order 13231 established a standing committee for research and, development (CR&D), chaired by OSTP, to coordinate a program of Federal Government R&D for protection of information systems for critical infrastructure, including emergency preparedness communications and the physical assets that support such systems, and to ensure coordination of government activities in this field with corporations, universities, federally funded research centers, and national laboratories.

The CR&D created under Executive Order 13231 consists of a committee of principals with senior R&D leadership from across departments and agencies, including NSF, DoC, NSA, and DoD. Supporting the CR&D principals is a working level subcommittee with representatives designated by principals from each of the departments and agencies. The committee of principals meets on a quarterly basis, and the subcommittee meets twice monthly. OSTP utilizes CR&D as a means of harmonizing Federal CIP R&D with other existing Federal R&D programs in which overlap or similar interest may exist.

Question 5. The President's proposal for the Department of Homeland Security recommends that NIST's Computer Security Division be moved to the new Department's Under Secretary for Information Analysis and Infrastructure Protection. What would be the benefit of this transfer?

Answer: The President's plan would combine the various operating units within the Federal Government with responsibility for cyber security into a single entity so that the operations and activities of these units can be more closely coordinated, which will serve to increase the efficiency and effectiveness of the Nation's critical infrastructure and cyber security efforts. The mission of the new department will require the close cooperation between the Federal Government, State and local government, and the private sector. There are aspects of computer security, which are not related to homeland security, that are integrated with other NIST information technology research and services programs. The role of NIST's Computer Security Division (CSD) will remain the same once moved to the DHS. The CSD will continue to interact with the private sector in the DHS as it has done within NIST. These activities will remain integrated with NIST programs. To the extent that computer security activities at NIST and at DHS intersect, it is expected that NIST will continue to collaborate with the CSD at the DHS on these matters.

Question 6. Climate change is obviously of concern to this Committee and myself. Can you explain where this would fall under the re-organization of the office and who would be responsible for ensuring that it is properly considered in the Administration's policy development?

(Answer provided jointly by Mr. Russell and Dr. Olsen).

Answer: The Director of OSTP, Dr. John Marburger, has stated that climate change is a matter of high importance. He has the primary responsibility for addressing the issue within OSTP, and for he to ensure other Administration policymakers benefit from the best scientific data available. Reflecting this fact, Dr. Marburger serves as the Executive Director of the President's Committee on Climate Change Science and Technology Integration. Within OSTP, the Science division has worked at all stages of the design, development, and implementation of the President's climate change program announced on February 14, 2002. The Associate Director for Science would serve as the Executive Director of the Interagency Working Group on Climate Change Science and Technology. OSTP's Environment Department includes experts who provide oversight and coordination of interagency climate science and technology activities on an ongoing basis. Expertise on energy and technology matters from other parts of OSTP is also readily available.

Question 7. A recent report by the National Science Foundation (NSF) found that the 6 States with the highest level of research and development expenditures—California, Michigan, New York, Texas, Massachusetts, and Pennsylvania—accounted for one-half the national effort. Members of this Committee are committed to ensuring greater research and development throughout the country. What are your thoughts about this report's findings, especially on the need to fund programs such as Experimental Program to Stimulate Competitive Technology (EPSCoT) and Ex-

perimental Program to Stimulate Competitive Research (EPSCoR) which were created to improve research and development in those States that have historically received less Federal research and development funding?

Answer: The NSF report shows rather striking variation in R&D investment by State. It is important, however, to analyze these differences in the proper context. Certain differences arise from the size of the population and economy in a given State. Other disparities result from the support of Federal facilities located in various States. The State rankings are entirely different when the R&D investment is normalized by Gross State Product (GSP). California drops out of the list completely, and other States, such as Delaware, Rhode Island, New Mexico, and Idaho then appear in the top 10. The point is that the investment must be considered in the context of the economy of, and Federal facilities in, each State, rather than a simple distribution of dollars across the States.

That aside, it is clear that an unequal geographic distribution of R&D funding may result when awards are made using the peer-review process. This successful process helped establish and maintain our Nation's worldwide science and engineering leadership. Traditional teaching institutions, which are engaged in transforming themselves into research institutions, require time to nurture new faculty and new facilities that can compete for peer-reviewed funding. Despite the popular image of a scientist or engineer toiling in isolation, researchers thrive on interactions with colleagues. Often a critical mass of researchers is required to produce an environment that fosters the new ideas that can win funding. An even playing field requires a long-term commitment on the part of the institution and a long-term investment in infrastructure and academic culture. I believe that EPSCoR is working with this ideal in mind.

I support the goal of EPSCoR, which is to provide resources to States that have historically received lesser amounts of Federal R&D funding but have demonstrated a commitment to develop their research bases and improve the quality of science and engineering research conducted at their universities and colleges. We hope the EPSCoR program will, taken in the aggregate and observed, over time, result in sustainable science and technology infrastructure improvements at the State and institutional levels that significantly increase the movement of EPSCoR researchers into the mainstream of Federal and private sector R&D support.

Question 8. The Administration is currently developing explicit investment criteria for decisionmakers to use for budgeting, selecting, and managing R&D programs. I understand that the Administration intends to apply these criteria to all types of R&D programs throughout the government in fiscal year 2004.

(Answers provided jointly by Mr. Russell and Dr. Olsen).

Question 8 (a). Are you concerned that the use of these criteria will drive program managers to invest in only applied R&D, which is easier to evaluate than basic R&D?

Answer: Neither OSTP nor OMB believes that the R&D investment criteria, developed as part of the President's Management Agenda, will drive program managers to invest only in applied R&D. The criteria simply request that agencies explain why a research investment is important—either to society or to the advancement of a scientific field. The criteria ask that agencies explain how the allocation of their funds supports the best research possible. These criteria stress the research community's values of quality and relevance. In addition to these two criteria of quality and relevance, the final criterion of performance was added. This criterion seeks to provide additional guidance to the agencies on applying the requirements of the Government Performance and Results Act (GPRA) to their research programs. The investment criteria will help agencies better explain their programs.

Throughout the criteria guidance, OSTP and OMB indicate that basic research should involve risk-taking and innovation, and the expectations of basic research outcomes should not be set to drive research toward less risky or ambitious efforts. In fact, in some ways, using the criteria, it is easier to illustrate the appropriateness of the Federal role in funding basic research, where there is not a clear economic incentive to do the research, or where the payoffs are too long-term or too uncertain.

Question 8 (b). The criteria were tested as part of a pilot program at the Department of Energy for the FY2003 budget process. According to an Administration document, "useful data on the expected benefits and realized performance of many projects was missing in the pilot project." What efforts have you taken to address this problem?

Answer: OMB has held meetings with Department of Energy (DOE) staff to communicate expectations regarding the type and extent of data the Department should submit with its fiscal year 2004 request to OMB for its applied energy technology programs. In these meetings, OMB sought to understand better the Department's reporting issues, to refine and to clarify the data request, and to agree upon specific

measures that DOE would take to improve the data submitted for fiscal year 2004. DOE is developing an electronic reporting system that will help gather the data in a way that will allow inquiry at both the programmatic and project levels. Program- and some project-level data will be provided to OMB as part of DOE's fiscal year 2004 budget submission.

Question 8 (c). Were any programs canceled as a result of applying the criteria at DOE?

Answer: No DOE programs were canceled as a result of using the applied R&D investment criteria in preparing the fiscal year 2003 President's budget request. Resources were redirected within programs and between particular energy technology areas. As an example, DOE programs successfully helped develop high average wind speed turbines that are now approaching commercialization. Using data collected with the applied R&D investment criteria, the Administration redirected funds to development of power technologies that can be used in lower wind-speed areas. This redirection is one example of how the Administration intends to keep DOE applied energy technology programs focused on pre-competitive R&D that supports but does not compete with industry research and solves real national needs.

RESPONSE TO WRITEN QUESTIONS SUBMITTED BY HON. JOHN MCCAIN TO KATHIE L. OLSEN, PH.D.

Question 1. In your statement, you have mentioned concerns about ensuring a balanced research portfolio. Do you feel that doubling the National Science foundation or any research agency at this time is a wise move? What type of adjustments would you make to the current R&D portfolio to ensure a more appropriate balance?

Answer: I believe that we all recognize the importance that science and technology play in our national security, ensuring a strong economy, our health and well-being, and education of our citizens. For these reasons, I believe that we must continue to make the right investments in science and technology (S&T) funding, promote partnerships among government, academia, and industry, strengthen our Nation's research infrastructure, and develop education programs and opportunities that excite, engage, enlist, and train the next generation of U.S. scientists and engineers. Making the right investment involves reassessing research priorities and providing additional support for some programs, reallocating support across some programs, and ending other programs.

The National Science Foundation (NSF) supports basic research and education across the fields of science and engineering. NSF provides about 20 percent of Federal support to academic institutions for basic research. That said, it is important for the Office of Science and Technology Policy (OSTP) to take the lead in coordinating a broad and balanced Federal research portfolio that challenges the frontiers of scientific knowledge, yet is based on the excellence defined by our robust merit-review process. More money, however, doesn't necessarily translate into more results or scientific or technological breakthroughs. Thus, it is important to prioritize our S&T investments, especially with respect to scientific opportunities, to maximize the return. We must identify and prioritize areas of science and engineering where we believe that our investments will have a major impact. We then must look to the role of the Federal agencies in the support of these national needs. We must continue to recognize that advances in multidisciplinary fields require a strong education and training in the basic sciences and ensure that our portfolio includes the sustained viability of these disciplines for our national priorities. We also must recognize that the advances may require investments in research facilities, advanced instrumentation, and computer modeling and capability. Finally, we need to ensure that the size and duration of the research awards enable the researcher to carry out the proposed studies. I do not believe that doubling a budget is the best approach to use for investing in research and development. Instead, we need to identify areas where we believe that the investment will have the greatest impact on the return of the budget, and rationally assess the funding needs of those areas.

I do believe that we need to focus on the physical sciences and engineering to ensure both continued advances in these fields of study as well as training of the next generation.

Question 2. In the past, many large-scale science projects were presented to Congress with cost estimates that did not reflect the total project costs. Will you ensure that total life cycle costs are presented when requesting Congressional approval of these projects?

Answer: Large-scale science projects at the Department of Energy (DOE), NSF, and the National Aeronautics and Space Administration (NASA) vary in size, scope and duration. Many of these projects are one-time construction projects that not

only yield new capabilities to do research but also provide new understanding in the process of constructing them. For these reasons, reserves are generally factored into the construction of R&D-related facilities, to address delays or complications that cannot be predicted. While such factors complicate the accurate presentation of total life cycle costs for every project, I believe that efforts need to be made to do this. For example, NASA includes the total life cycle costs for a mission when it requests Congressional approval of its projects. NASA missions have a clear start point and a clear ending point. These life cycle costs include project formulation, the cost of building the mission, launch costs, mission operations and data analysis. I believe that lessons learned at NASA indicate that it is essential to have both strong program and budget management accompanied by both quarterly reviews and independent cost assessments. The funding for university researchers who want to use the mission data is included in the data analysis costs. But even for NASA, once the mission has ended, the utility of the data has not. In this case researchers who want to use data from a multitude of missions that have ended compete for funds out of a separate fund not associated with any mission.

Many of DOE's large-scale user facilities are designed for very long lifetimes. An accelerator, research reactor or synchrotron light source may usefully operate for more than 20 years, during which time multiple modifications and upgrades are made. Although additional improvements can be made, DOE has taken certain steps to improve its ability to represent the true cost of a large project to Congress. For example, DOE now requests project engineering design (PED) funds for all large projects. Rather than requesting a construction start at the conceptual design stage, PED funding allows designated projects to proceed into preliminary design (Title 1) and definitive design (Title II) stages before Congress is asked to fund construction activities (Title III).

For DOE scientific user facilities, full instrumentation of a facility takes many years. DOE designs and builds its new facilities so that they will be the best in the world when completed. Because new facilities generally deliver higher power, greater collision rates, or greater particle fluxes when turned on, something new is always learned. Gradual completion of instrumentation allows for better optimization of instrumentation to the true capabilities of the facilities. However, DOE can do a better job of factoring in the costs of additional instruments into the total project cost. With the fiscal year 2003 President's request, funding is requested in the Neutron and X-Ray Scattering line for instruments that will be delivered to The Spallation Neutron Source (SNS) beginning in 2007. The SNS construction is scheduled for completion in 2006.

OSTP fully recognizes that NSF faces a number of challenges associated with large facilities funded through its major research equipment and facilities construction account. OSTP will work with the Office of Management and Budget (OMB) to help NSF formulate and implement its Large Facilities Projects Management and Oversight Plan. OSTP, in cooperation, with OMB, will ensure that issues regarding both the construction and operation of large NSF facilities are addressed. I support OMB's efforts to reflect the true cost of large-scale projects to the fullest extent possible, and if confirmed, will work with OMB and the agencies to achieve this goal.

Question 3. An issue of concern to this Committee is the decreasing number of undergraduate and graduate students pursuing degrees in science, mathematics, and engineering. Based on your experience, what can the Congress and the Federal Government do to help increase the number of graduates with degrees in these fields, especially among minorities and women?

Answer: Throughout my career, I have been very committed to enhancing the careers of beginning scientists and have served on Federal advisory panels, task groups and have been involved in developing new grant programs as well as the Presidential Early Careers for Sciences and Engineers. I believe that more than ever, America needs a strong and diverse Science, Technology, Engineering and Mathematics (STEM) workforce. There are several parts of the STEM career pathway that need to be strengthened and widened in order to achieve this goal. (Please also see my written testimony).

I am concerned about the state of primary and secondary math and science education in our schools, and want to make sure that, like reading, we do what is necessary to equip students with the skills they will need to compete in the new world economy. The latest "Nation's Report Card" on student math achievement showed that 4th- and 8th-grade students have demonstrated continuous progress over the last 10 years. However, 12th-grade students performed less well than they did 4 years earlier, and the achievement gap between white students and their black and Hispanic peers has remained virtually unchanged since 1990. The President's Math and Science Partnership Initiative is a great step in the right direction to address these challenges, as it will bring together scientists and mathematicians from insti-

tutions of higher education with teachers and administrators from our primary and secondary schools to address what needs to be done to improve K-12 mathematics and science education and increase student achievement in these subjects. OSTP continues to work with the National Science Foundation and the Department of Education to make sure that they coordinate their efforts in this area and together build new partnerships with the academic and practitioner communities.

With regard to higher education, we are making significant efforts to increase the number of students, especially those from traditionally under-represented groups, to pursue and complete degrees in STEM fields. For example, NSF currently supports over $330 million in programs to improve undergraduate STEM education. NSF programs currently provide direct support to nearly 34,000 undergraduate students enrolled in technical colleges or baccalaureate programs. These efforts are spread throughout NSF's programs as part of an effort to encourage the integration of research and education. I believe that we need to work with the heads of all of the Federal science agencies through the National Science and Technology Council (NSTC) to enhance coordination of existing S&T workforce programs and planned workforce initiatives.

Science & Engineering Indicators 2002 provides a broad base of quantitative information about U.S. science, engineering, and education. It reports that while approximately 25-30 percent of students entering colleges in the U.S. plan to major in science & engineering (S&E) fields, fewer than 50 percent actually complete an S&E degree within 5 years, and under-represented minorities drop out of S&E programs at a higher rate than other groups. I was alarmed by these statistics and believe that we need to work closely with the universities to identify best practices that prevent this dramatic drop-out rate and enhance activities to ensure the graduation of these STEM students, students that already have the interest and desire when entering college.

In addition, I have supported and will continue to support public-private partnership efforts to expand and diversify the STEM workforce. For example, to follow through on recommendations made by the Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development (P.L. 105-255), eight Federal agencies, including NASA, provided seed funding for a series of blue ribbon panel meetings convened by the Building Engineering and Science Talent (BEST) public-private partnership. Three separate panels on preK-12, higher education and workforce issues will make recommendations to Congress and the Administration. Based in part on these recommendations, I plan to challenge university, foundation and private sector leaders to create innovative scholarship, job training, internship and other programs to encourage all students, especially women and minorities, to pursue STEM careers.

Question 4. One big issue of concern to me is the effect that Congressional earmarks have on Federal research agencies. For example, in FY2002, NOAA had over two-thirds of the Department of Commerce's earmarks, which totaled 74 projects costing over $160 million. Based on your experience in Federal research agencies, could you please discuss the effect of earmarks on Federal research activities?

Two recent articles (*Science*, vol. 293, Sept. 28 2001, p, 2364 and the *American Association for the Advancement of Science R&D Update*, Oct. 2, 2001, pp. 1-4) address congressional earmarking of R&D projects. As you are aware, last year, *The Chronicle of Higher Education* reported that $1.7 billion were directed into specific university projects that had not been requested, which is up 60 percent over 2000. While the "directed research" only is about 1.6 percent of the total R&D budget, as noted in the question, they are clearly concentrated in a few key agencies and programs. Mitchell Daniels, Director of the Office of Management and Budget, has met with academic and science-policy administrators to enlist their support in opposing the practice.

The effect of the "directed research" on the programs within an agency can be damaging to the research at that agency. In some cases, existing programs or activities must be curtailed to enable sufficient funds to carry out the "directed research" projects.

Question 5. One issue that was raised by the Young Report last year which has been borne out by the recent REMAP report, is that requirements for scientific research have not been fully integrated into the plans for construction and operation of the Space Station. What recommendations would you have for ensuring better integration of research priorities into planning for future NASA projects, such as a mission to Mars?

Answer: The primary purpose of the International Space Station is to be a world class research facility and we are still in the process of building that facility. As the REMAP Task force stated, "NASA has a stake in some of the biggest intellectual problems in science . . . [and the] Space Station provides a unique environment for

attacking these problems." Science remains the central focus of the Space Station program, and meaningful science is already being done onboard the Space Station. Perhaps the greatest value of the Station will be in its versatility—it is not a single discipline laboratory, but instead offers long-term, continuous access to the space environment with skilled human operators onsite.

From my experiences, the recommendation that I would have for ensuring better integration of research priorities into planning for future NASA projects is to ensure scientists have a voice, from the beginning to the end of the program and also serve as equal partners in all decisions regarding the project.

Question 6. Climate change is obviously of concern to this Committee and thyself. Can you explain where this would fall under the re-organization of the office and who would be responsible for ensuring that it is properly considered in the Administration's policy development?

Answer: (Answer provided jointly by Dr. Olsen and Mr. Russell). The Director of OSTP, Dr. John Marburger, has stated that climate change is a matter of high importance. He has the primary responsibility for addressing the issue. Reflecting this fact, Dr. Marburger serves as the Executive Director of the President's Committee on Climate Change Science and Technology Integration. Within OSTP, the Science Division has worked at all stages of the design, development, and implementation of the President's climate change program announced on February 14, 2002. The Associate Director for Science would serve as the Executive Director of the Interagency Working Group on Climate Change Science and Technology. OSTP staffing is provided primarily from its Environment Department. Expertise on energy and technology matters from other parts of OSTP is readily available. Moreover, the Associate Director for Science will co-chair the National Science and Technology Council Committee on Environment and Natural Resources.

The issue of climate change provides a useful illustration of how OSTP's re-organization allows for the use of a multi-discipline response to complex issues that cut across traditional organizational boundaries.

Question 7. A recent report by the National Science Foundation (NSF) found that the 6 States with the highest level of research and development expenditures—California, Michigan, New York, Texas, Massachusetts, and Pennsylvania—accounted for one-half the national effort. Members of this Committee are committed to ensuring greater research and development throughout the country. What are your thoughts about this report's findings, especially on the need to fund programs such as Experimental Program to Stimulate Competitive Technology (EPSCoT) and Experimental Program to Stimulate Competitive Research (EPSCoR) which were created to improve research and development in those States that have historically received less Federal research and development funding?

Answer: Given the importance of research acid development to this Nation, I believe that we must have a strong science and technology research and education base across the States. Following the implementation of EPSCoR at NSF, other Federal agencies have established similar programs consistent with their missions. In some cases, the eligible States in these programs differ from those in the EPSCoR program at NSF. If I were confirmed, I would like to use the NSTC Committee on Science to form a working group to re-assess the program across agencies to identify best practices for success.

I strongly support the goal of EPSCoR, which is to provide resources to States that have historically received lesser amounts of Federal R&D funding but have demonstrated a commitment to develop their research bases and improve the quality of science and engineering research conducted at their universities and colleges. We hope the EPSCoR program will, taken in the aggregate and observed over time, result in sustainable S&T infrastructure improvements at the State and institutional levels that significantly increase the movement of EPSCoR researchers into the mainstream of Federal and private sector R&D support.

Question 8. The Administration is currently developing explicit investment criteria for decisionmakers to use for budgeting, selecting, and managing R&D programs. I understand that the Administration intends to apply these criteria to all types of R&D programs throughout the government in fiscal year 2004.

(Answers provided jointly by Dr. Olsen and Mr. Russell).

Question 8 (a). Are you concerned that the use of these criteria will drive program managers to invest in only applied R&D, which is easier to evaluate than basic R&D?

Answer: Neither OSTP nor OMB believes that the R&D investment criteria, developed as part of the president's Management Agenda, will drive program managers to invest only in applied R&D. The criteria simply request that agencies explain why a research investment is important—either to society or to the advancement of a scientific field. The criteria ask that agencies explain how the allocation

of their funds supports the best research possible. These criteria stress the research community's values of quality and relevance. In addition to these two criteria of quality and relevance, the final criterion of performance was added. This criterion seeks to provide additional guidance to the agencies on applying the requirements of the Government Performance and Results Act (GPRA) to their research programs. The investment criteria will help agencies better explain their programs.

Throughout the criteria guidance, OSTP and OMB indicate that basic research should involve risk-taking and innovation, and the expectations of basic research outcomes should not be set to drive research toward less risky or ambitious efforts. In fact, in some ways, using the criteria, it is easier to illustrate the appropriateness of the Federal role in funding basic research, where there is not a clear economic incentive to do the research, or where the payoffs are too long-term or too uncertain.

Question 8 (b). The criteria were tested as part of a pilot program at the Department of Energy for the FY2003 budget process. According to an Administration document, "useful data on the expected benefits and realized performance of many projects was missing in the pilot project." Wbat efforts have you taken to address this problem?

Answer: OMB has held meetings with DOE staff to communicate expectations regarding The type and extent of data the Department should submit with its fiscal year 2004 request to OMB for its applied energy technology programs. In these meetings, OMB sought to understand better the Department's reporting issues, to refine and to clarify the data request, and to agree upon specific measures that DOE would take to improve the data submitted for fiscal year 2004. DOE is developing an electronic reporting system that will help gather the data in a way that will allow inquiry at both the programmatic and project levels. Program- and some project-level data will be provided to OMB as part of DOE's fiscal year 2004 budget submission.

Question 8 (c). Were any programs canceled as a result of applying the criteria at DOE?

Answer: No DOE programs were canceled as a result of using the applied R&D investment criteria in preparing the fiscal year 2003 President's budget request. Resources were redirected within programs and between particular energy technology areas. As an example, DOE programs successfully helped develop high average wind speed turbines that are now approaching commercialization. Using data collected with the applied R&D investment criteria, the Administration redirected funds to development of power technologies that can be used in lower wind-speed areas. This redirection is one example of how the Administration intends to keep DOE applied energy technology programs focused on pre-competitive R&D that supports but does not compete with industry research and solves real national needs.

Response to Written Questions Submitted by Hon. Ron Wyden to Kathie L. Olsen, Ph.D.

Thank you for scheduling and chairing the confirmation hearing last Thursday. I, too, share your view that climate change is a critically important scientific issue that I believe will remain on of our Nation's top priorities. I also very much appreciate the opportunity to provide a written response to your excellent question:

Question 1. As a scientist, could you explain how the Administration's policy on reducing greenhouse gas intensity which the head of the Council on Environmental Quality admitted will allow U.S. emissions to rise will help this Nation address climate change in a meaningful way?

Answer: The President's greenhouse gas intensity target will address climate change in a meaningful way in two respects. First, it will achieve substantial reductions in future emissions compared to what would otherwise occur. Second, the target will help ensure the economy can grow, which is necessary not only for our Nation's overall well-being but also to spur innovation in new technologies that will enable us to achieve longer term climate objectives. I would like to elaborate on these two points.

First, the measure of greenhouse gas intensity is the ratio of the amount of greenhouse gas emitted per dollar of Gross Domestic Product (GDP). Intensity is a measure of the efficiency of our economy as it relates to producing greenhouse gases. Setting an intensity target rather than an absolute emissions cap allows the Nation to meet its goal of economic growth while reducing emissions from levels that would otherwise occur. The President has set a goal of reducing the greenhouse gas intensity by 18 percent, which is nearly 30 percent lower than current baseline projections.

The second point concerns economic growth. You are correct in your statement that if our economy grows, emissions will increase under this policy. Unfortunately, greenhouse gas emissions historically have been linked to the size of our economy. Given the uncertainty in the science, it is prudent to try to reduce emissions without reducing economic growth. The Administration's intensity reduction goal is the first step in a policy that will first slow, and if the science justifies, stop and reverse growth in greenhouse gas emissions. An intensity target creates incentives for technological innovation and investment into long term approaches, while allowing the economic vitality that feeds technological innovation. By achieving real reductions relative to the baseline and by preserving economic growth, the Administration's greenhouse gas intensity target will address climate change in a meaningful way.

It is my belief that OSTP's role is to ensure that the best science is supported. With respect to climate change, I believe we need to target science that will reduce uncertainty and advance current knowledge and understanding of climate systems. As Chief Scientist at NASA, I have regularly utilized the outstanding reports prepared by the National Research Council of the National Academy of Sciences for knowledge, advice and direction. In advising the President on scientific matters, OSTP also relies on the best science available. In my opinion, the best science review that we have available at this time on climate change is contained in the National Academy's Report "Climate Change Science: An Analysis of Some Key Questions."

If confirmed, I look forward to working with OSTP, other Federal agencies, as well as you and other interested members of the Committee and Congress in ensuring our climate policies benefit from sound science.